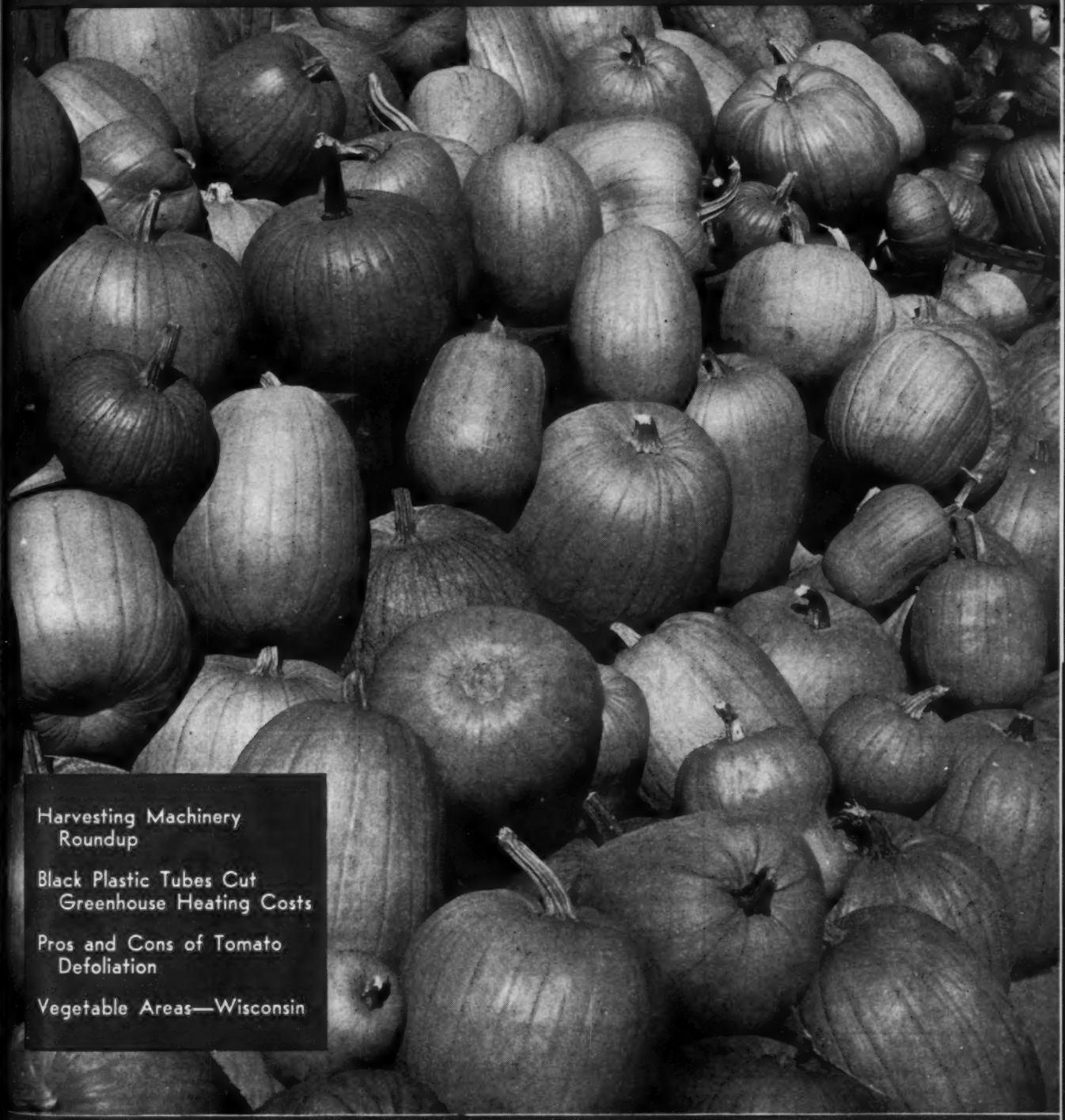
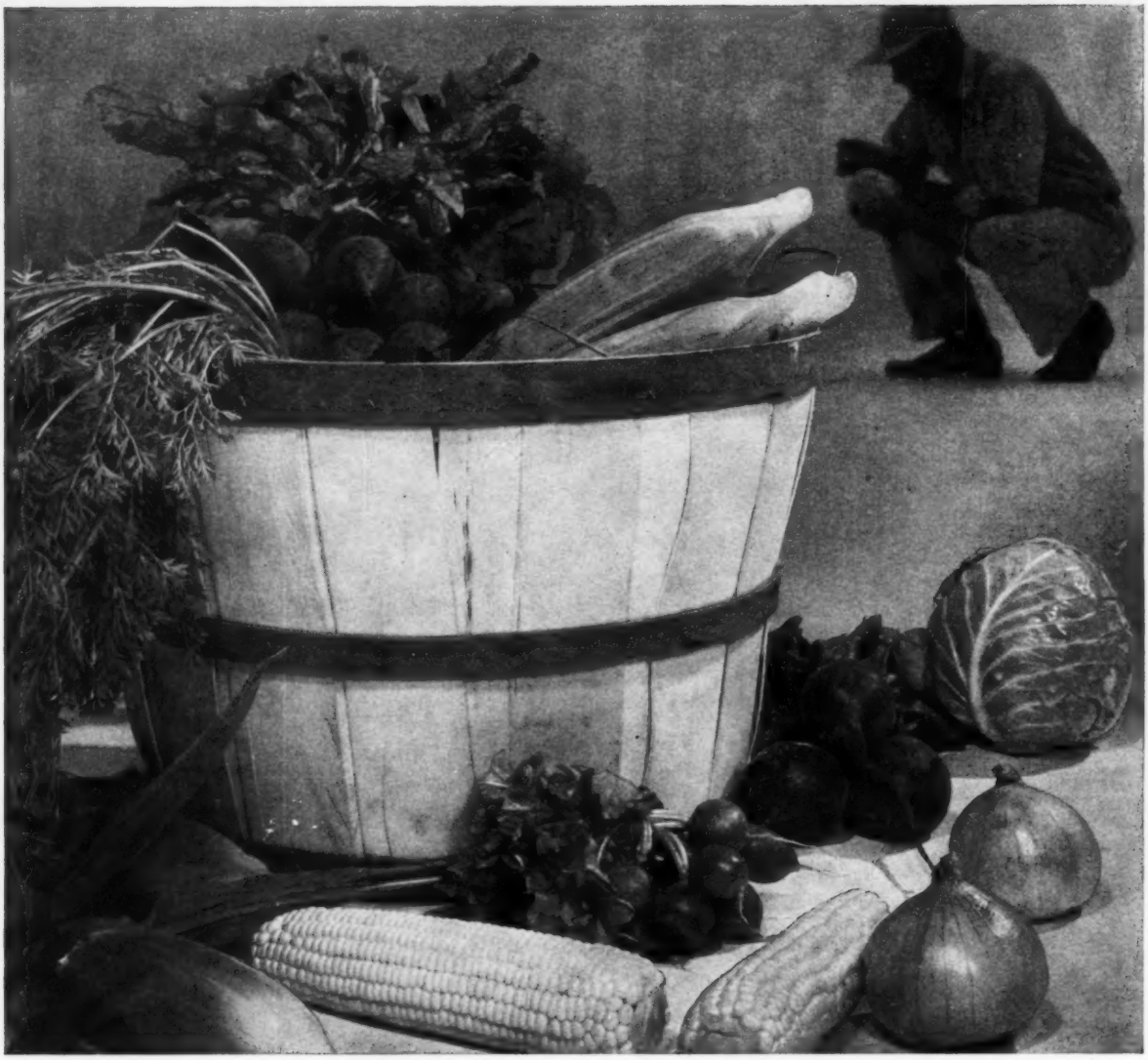
American
Vegetable Grower
and MARKET GROWERS JOURNAL

OCTOBER • 1957



- Harvesting Machinery Roundup
- Black Plastic Tubes Cut Greenhouse Heating Costs
- Pros and Cons of Tomato Defoliation
- Vegetable Areas—Wisconsin

Welcome to Market Growers Journal Readers *See page 11*



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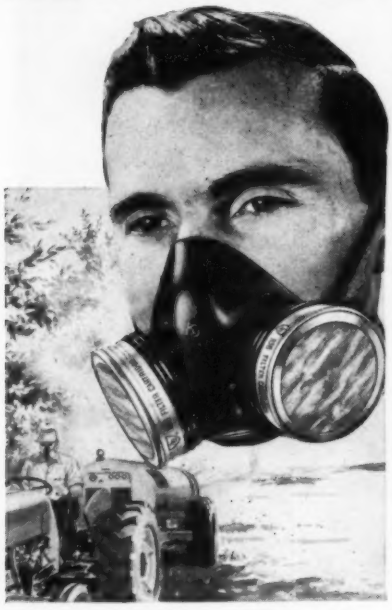

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Market Growers Journal

VOL. 5 NO. 10

OCTOBER 1957

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Cover photograph by J. H. Staby

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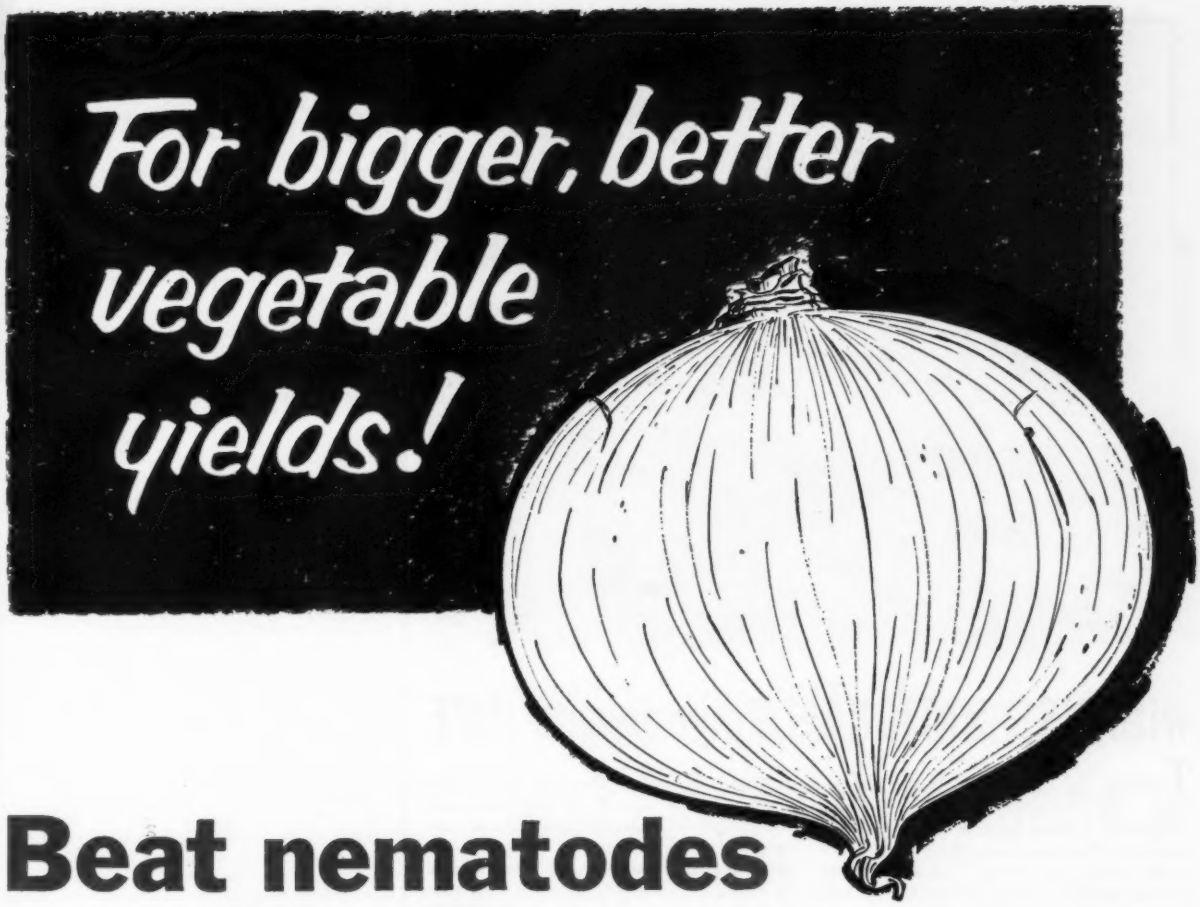

Beat nematodes with D-D® Soil Fumigant

NEMATODES, tiny worms that take a giant-size bite out of your vegetable profits, *can* be stopped with D-D soil fumigant. Powerful D-D soil fumigant puts an end to them fast and gives your plants the chance to develop healthy roots . . . for better yields . . . for bigger profits.

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Use of economical D-D soil fumigant, properly applied before you plant, stops nematode damage for the entire season. The initial low cost is returned many times over in bigger yields of better quality vegetables.

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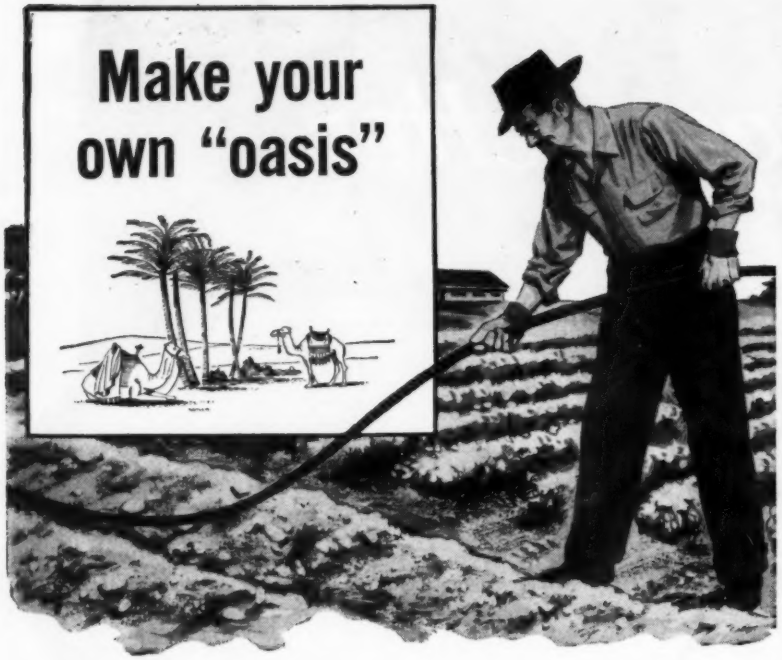

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THANKS to National Polyethylene Pipe, the installation of a low-cost irrigation system is now an easy, one-man job. You can have all the water you want, when and where you want it, at minimum cost, and you can install the system yourself.

National Polyethylene Pipe is flexible. It handles like hose—can be run around corners, over obstacles and under fences. You can cut it with a knife or hacksaw, insert the fittings and secure them with a simple clamp and screwdriver. It couldn't be easier. And tying into present systems is no problem . . . threaded adapters are available in a variety of sizes.

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NATIONAL **Polyethylene** PIPE

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LETTERS

TO THE EDITOR

Starting Melon Seedlings

Dear Editor:

In your Answering Your Questions column in the April issue I observed the question about starting melon seedlings. Dr. H. C. Mohr, of the department of horticulture at Texas A. & M., has developed a method of growing cucumber and melon seedlings in peat.

College Station, Tex. E. R. Jensen
Texas A. & M.

Dr. Mohr reports that he has had good results in starting cucurbit seedlings for transplanting by two different methods.

1) The use of peat pots. The young plants are transplanted when roots begin to grow through the walls of the pots. A good potting soil, with a fairly high percentage of clay, is best. Care should be taken in handling pots when wet, or considerable disturbance of roots through crushing or pot breakage results.

2) The use of plant bands with shredded sphagnum moss. Sphagnum moss is shredded by rubbing it through a hardware cloth screen. Bands are filled two-thirds full, seeds planted, and band filled level full. Soak thoroughly after planting—avoid overwatering thereafter. Transplant when sphagnum is filled with roots.

Advantage of sphagnum over peat pots is that compact arrangement of plant bands in flats permits much larger number of plants per square foot. However, I understand there are now square peat pots on the market, which may be as economical of space as plant bands.—Ed.

Horseradish Grower Writes

Dear Editor:

In February's AMERICAN VEGETABLE GROWER, someone from Missouri inquired for names of growers of horseradish roots.

Wish you would please add our name to his list. Perhaps we could help him out.

Caldwell, N. J. P. Pollio
Pollio's Farm

Likes Spring Issues

Dear Editor:

I am a subscriber to AMERICAN VEGETABLE GROWER and would like an extra two copies of your April and May numbers. You can send them to me and let me know how much to pay you for them.

Peoria, Ill. B. G. Wolter

We are delighted that Reader Wolter found these spring issues interesting and worthwhile. Extra copies are available at 25 cents each.—Ed.

Carrot Shipper Writes

Dear Editor:

We read with great appreciation the article by A. B. Kennerly in your August issue about our operation of prepackaging carrots.

We wish to express our thanks to Mr. Kennerly for the wonderful job he did.

As a recipient of your publication I find many items of interest and education in the issues. It is odd that supervising the shipping of 50 to 60 cars of parsley each year I had to look in your magazine to see what the seed looked like. *(Know Your Vegetable Seeds, Jan., 1956.)*

San Antonio, Tex. S. E. Johnson
Van De Walle & Sons

VGAA SPEAKER TO TALK ON FLORIDA VEGETABLE INDUSTRY

The roles played by research and education in the growth of the Florida vegetable industry will be covered by Dr. F. S. Jamison at the 49th annual convention of the Vegetable Growers Association of America. The guest speaker is head of the vegetable crops department at the University of Florida, Gainesville. The convention is slated for December 9-12 at the Jung Hotel in New Orleans, La. Reservations may be made by writing to Joseph S. Shelly, secretary, 528 Mills Bldg., 17th & Pennsylvania Ave., N.W., Washington 6, D.C.

'SOIL' YEARBOOK NOW AVAILABLE

GROWERS will be interested to know that the 1957 Yearbook of Agriculture, *Soil*, is now off the press.

The USDA book contains 88 chapters written by 142 scientists in the fields of soil management, botany, chemistry, horticulture, soil conservation, agronomy, irrigation, and others.

Copies of the Yearbook may be secured from your congressman or purchased for $2.25 each from the Superintendent of Documents, Government Printing Office, Washington 25, D. C.

CALENDAR OF COMING MEETINGS AND EXHIBITS

Oct. 2-3—Second International Potato Harvester demonstration, of individual machines which both lift and deliver potatoes into bags or a vehicle or container, Honnington Grange, Lilleshall, Newport, Shropshire, England.—Potato Marketing Board, 50 Hans Crescent, Knightsbridge, London, S.W. 1, England.

Oct. 9-11—Florida Fruit & Vegetable Association 14th annual convention, Hotel Fontainebleau, Miami Beach.—Florida Fruit & Vegetable Assoc., 4401 E. Colonial Drive, Orlando.

Oct. 10-12—Carolina Yam Festival, Tabor City, N.C.

Nov. 14-15—Western Growers Association 32nd annual conventon, Hotel del Coronado, Coronado, Calif. Headquarters: 606 So. Hill St., Los Angeles 14, Calif.

Nov. 20—Southern Minnesota Vegetable Growers Association 12th annual meeting, Albert Lea Armory.—Juel B. Nelson, Sec'y, Albert Lea.

Nov. 25-26—Cornell Seed School, Ithaca, N.Y. —P. A. Minges, Dept. of Vegetable Crops, Ithaca.

Dec. 2-4—Potato Association of America annual meeting, Plant Industry Station, USDA, Beltsville, Md.—W. J. Hooker, Sec'y, East Lansing, Mich.

Dec. 9-12—Vegetable Growers Association of America 49th annual convention, Jung Hotel, New Orleans, La.—Joseph S. Shelly, Sec'y, 528 Mills Bldg., Washington 6, D. C.

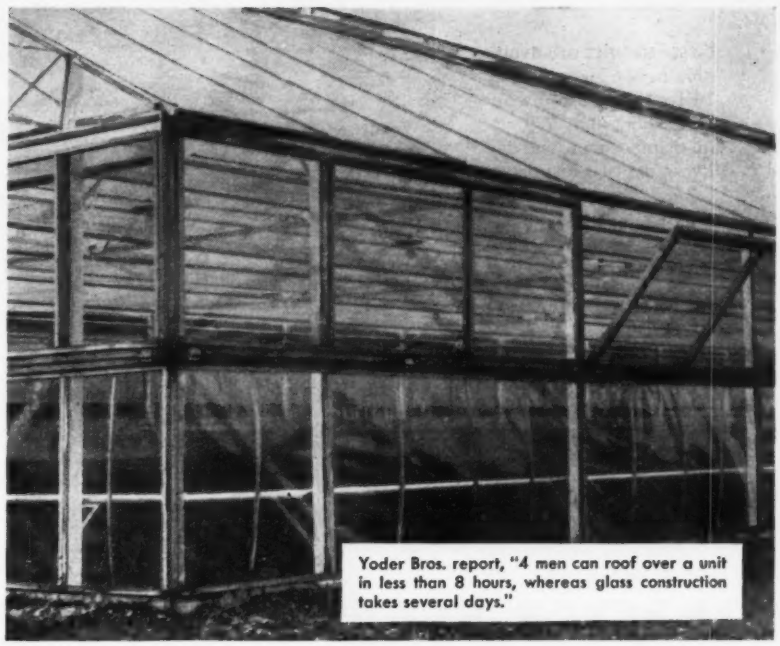
Jan. 17-27, 1958—National Potato Chip Week.

Jan. 22-27—National Potato Chip Institute 21st annual national conference, Hollywood, Fla. —Harvey F. Noss, Exec. Vice Pres., 946 Hanna Bldg., Cleveland, Ohio.

Jan. 27-30—United Fresh Fruit and Vegetable Association 54th annual convention, Fairmont and Mark Hopkins Hotels, San Francisco, Calif. Assn. headquarters: 777 14th St., N.W., Washington 5, D.C.

Feb. 3-5,—Ohio Vegetable and Potato Growers Association 48rd annual meeting, Neil House, Columbus.—E. C. Wittmeyer, Sec'y, Ohio State U., Columbus 10.

Dec. 1-4,—Vegetable Growers Association of America Golden Anniversary Celebration, Cleveland, Ohio.—Joe Shelly, Sec'y, 528 Mills Bldg., 17th St. and Pennsylvania Ave., N.W., Washington 6, D.C.



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"We estimate we can build a greenhouse that provides excellent growth at a new low cost with Sisal-Glaze," report Yoder Bros.

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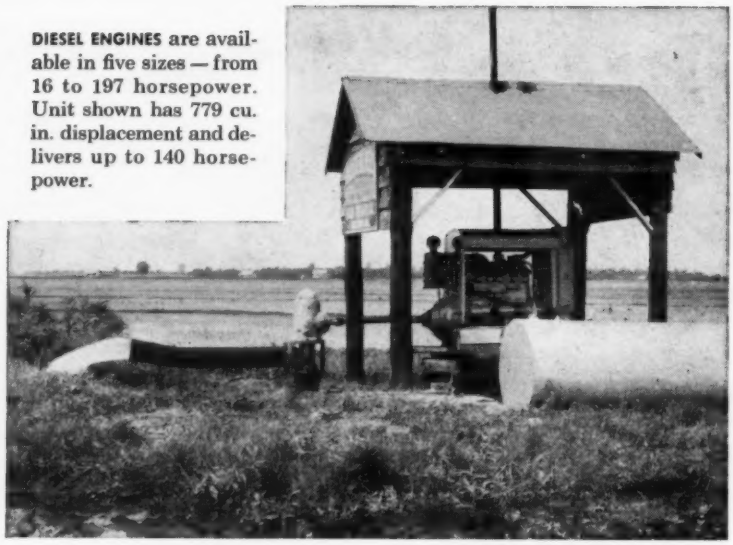

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TRACTOR-RUGGED POWER for thirsty acres

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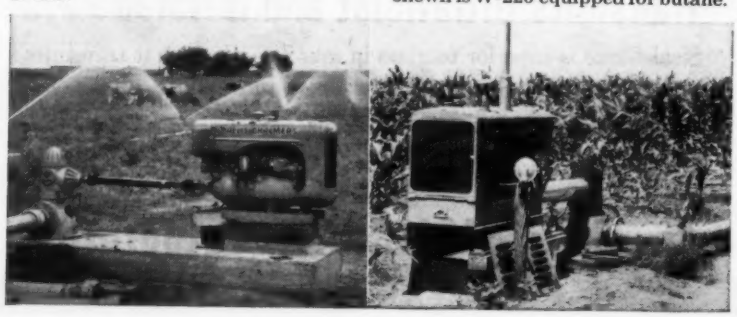
ALLIS-CHALMERS

GASOLINE ENGINES are available in two sizes—delivering from 15 to 50 horsepower. Unit illustrated is the B-125.

ENGINES for BUTANE, PROPANE, or NATURAL GAS available with 125 and 226 cu. in. displacement. Engine shown is W-226 equipped for butane.



Answering Your QUESTIONS

Don't let your questions go unanswered. Whether large or small, send them with a three-cent stamp for early reply to Questions Editor, AMERICAN VEGETABLE GROWER, Willoughby, Ohio.

TOMATO DISEASE

I am sending you leaves from my greenhouse tomato plants. These plants have a swelling above the roots at the soil level, then turn black, shrivel, and dry up. What disease is this and what can I use to control it other than steam sterilization?—*Ohio*

The disease attacking your plants is Rhizoctonia. It is also possible that some pythium is present. To sterilize your soil, MC-2 (methyl bromide), sold by Dow Chemical Co., Midland, Mich. is recommended. This material has to be confined in contact with the soil for a period of 24 to 48 hours to be effective, usually by means of a gasproof tarpaulin, if you are sterilizing beds. For additional information on this material, write to Fred Fletcher at Dow Chemical.

LETTUCE PLANT BED COVERS

I would like to know what is recommended as plant bed covers for lettuce to protect the young plants from cold injury.—*North Carolina.*

Cloth covers are used on lettuce plant beds in your area to protect the young plants and to keep the beds warm enough so that the seed will germinate and grow. The covers are kept on only at night and on unusually cold days. They are usually removed after the plants have gotten to be one to two inches tall, although they are put back on the beds if any hard freezes occur.

"Tobacco cloth," such as used extensively on tobacco plant beds, makes a good cover. Sizes usually available are 4 x 24 yards and 5 x 20 yards. Two weights of cloth are available, one 22 x 18 threads and the other 24 x 28 threads.

The cloth is generally supported by lengths of lath which are bent into an arc, with the highest point in the center of the beds.

PICKLING CUCUMBER PRICES

How can I find out the average price paid to producers by pickling companies for cucumbers?—*Iowa.*

We are sending our reader USDA data on prices for cucumbers for pickling. The prices reflect unit value at the grower level and are averages for all varieties, grades, and methods of sale.

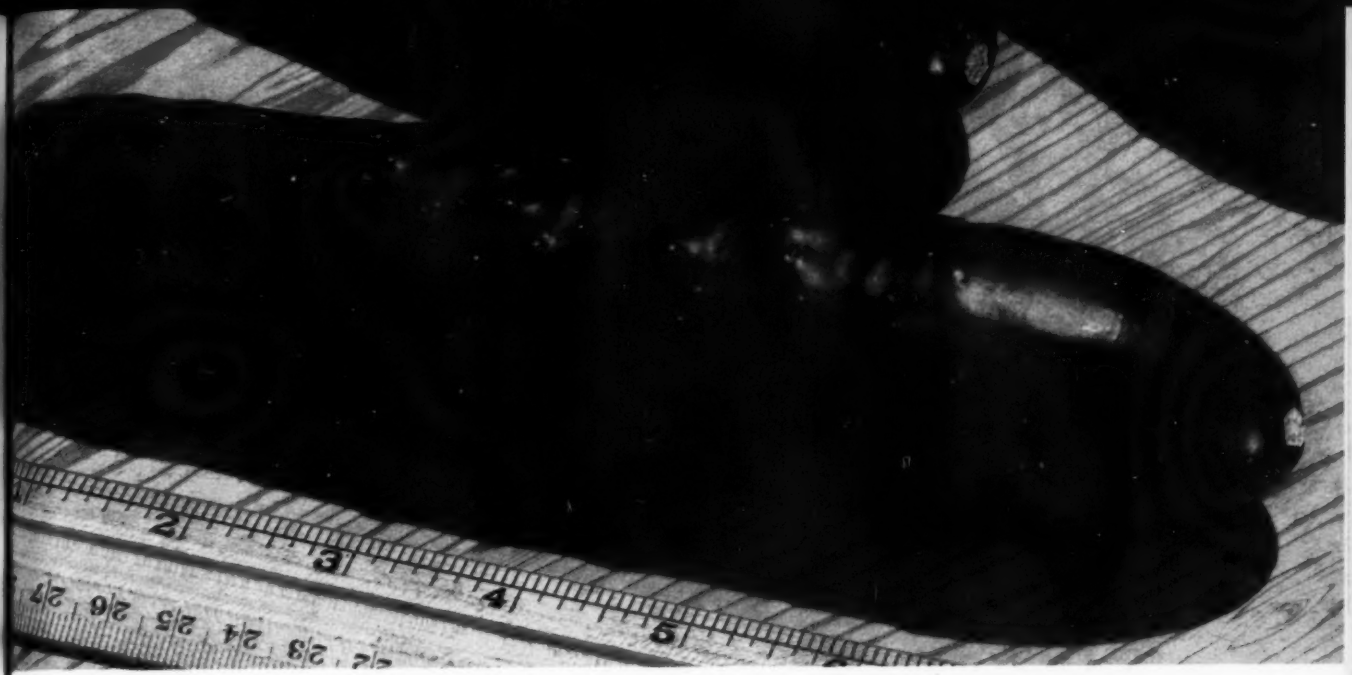
A major portion of the cucumbers for pickling crop is grown under contract between grower and processor, arranged in advance of planting time. Among other specifications, it is a common practice to specify various prices for various grades and sizes.

It might be wise to obtain more detailed information as to these price variables from other growers, nearby processors, or the county agent. It would be a good idea to arrange a contract with a processor before beginning production.

SWEETPOTATO FOR CANNING

What variety of sweetpotato is most commonly grown in our state for canning?—*Louisiana.*

Goldrush, an excellent all-round sweetpotato, which is wilt-resistant and produces very satisfactory yields of uniform potatoes. It has proved to be one of the best canning potatoes ever tested.



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Palomar Cucumber—a Ferry-Morse introduction. Resists Downy Mildew; far outyields Marketer on unsprayed plots, and produces more No. 1 fruits at every picking, even with normal spray control. Vigorous vines bear longer, darker-green fruits—about 6 days earlier than Marketer. See your Ferry-Morse dealer.

Tailor-made for you by FERRY MORSE SEED CO.

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MORE PRODUCTIVE THAN REGULAR HOMESTEAD

Homestead F-M Tomato—Selected from regular Homestead by Ferry-Morse breeders for larger fruit and more productive, compact plants. Highly resistant to Fusarium Wilt; maintains excellent fruit size throughout season. A superior green-wrap shipper with thick, firm walls even at the blossom end. At your Ferry-Morse dealer's.

Detroit, Mich. • Mountain View and Los Angeles, Calif.
Memphis, Tenn. • Harlingen, Texas • Tampa, Fla.

Market Growers Journal Joins American Vegetable Grower

EFFECTIVE with this issue, Market Growers Journal, with a record of 50 years' service to the vegetable industry, joins AMERICAN VEGETABLE GROWER to create a larger, improved magazine with increased coverage of all phases of vegetable growing and marketing.

These two magazines have a record of faithful service to the vegetable growing industry. Both Market Growers Journal and AMERICAN VEGETABLE GROWER have done an outstanding job of helping growers to greater production and greater profits.

A bigger, better magazine is the aim which made possible the joining of these two national magazines. The result inevitably will be a stronger publication.

Readers will notice continuing changes in the months ahead designed to produce a better magazine.

Improved efforts to publish practical, authoritative stories and illustrations will help growers increase yields of high quality vegetables which bring a premium on the market.

Up-to-date research findings, helpful experience stories from other growers faced with similar problems, and up-to-date news from manufacturers and suppliers will make vegetable growing more productive and profitable.

As in the past, it will be the aim of your national vegetable magazine to speak fearlessly without bias on all questions affecting the welfare of the vegetable industry.

YOUR MARKET GROWERS JOURNAL SUBSCRIPTION

If you ordered and paid for your subscription to Market Growers Journal, you will receive AMERICAN VEGETABLE GROWER for the balance of your subscription. If you subscribed to both magazines, your AMERICAN VEGETABLE GROWER subscription will be extended by the amount you still have coming on your Market Growers Journal subscription.

We welcome all Market Growers Journal subscribers. Let us have your comments, suggestions, and questions. We'll do our best to serve our new readers, as we have our old, in every way possible.

AMERICAN VEGETABLE GROWER has had a shining record of progress since the first issue made its appearance in the spring four years ago. To our readers and advertisers who have made this record possible, we pledge our best efforts in the coming years.

The history of this country shows the importance of influential magazines which have supported the work of organizations and leaders who unselfishly advance the interest of their industry. AMERICAN VEGETABLE GROWER now, more than ever before, becomes the mouthpiece of the expanding vegetable industry.

E. K. Meister

PUBLISHER

The Pierson-Gilbert pickle picker will be sold by Chisholm-Ryder Co., Niagara Falls, N.Y., who hope to have available a limited quantity for the 1959 season, after another year of testing in 1958. Pictured above is early model.

OUTMODING THE PICKING CREW

Here's a round-up of machines slated to make it easier and faster to bring in the crops

By B. M. KUBIK

FROM the day the first picking combine appeared in a vegetable field the trend to mechanical harvesting has been rapid and inevitable.

Caught between the shortage of manpower and the soaring cost of labor, growers are turning eagerly to new ways of cutting costs and saving labor. And since harvesting can represent as much as half the cost of growing the crop, it is only natural that mechanical harvesting has paced the trend to mechanization.

Besides representing major feats in engineering, mechanical harvesters also represent a concerted effort on the part of plant breeders and others to develop varieties suitable for mechanical harvesting. In some cases also the new equipment has required changes in cultural practices and growing methods.

Much of the progress that has been made in the development of mechanical harvesters is due to the processors, who have thrown their financial and moral support behind the development of new equipment and methods. Much is also due to grower ingenuity.

"Today things are changing so fast that anything over five years old is ancient history," says an official of a Wisconsin processing company. "In Wisconsin, and as is undoubtedly true elsewhere, the hand cutting of spinach for processing and the hand harvesting of carrots and beets for canning is something no farm youngster under 12 years of age has ever seen. Sweet corn is picked mechanically—a good many farm children would have to have it explained to them what was meant by the term, corn picking crew."

In New York, where 30,000 acres of snap beans are grown each year for processing, from 5% to 10% of the 1956 crop was harvested mechanically, and this figure was expected to be even higher for the 1957 crop. In Wisconsin there were 3 mechanical bean pickers in use in 1954, 10 in 1955, and 25 or 30 in 1956.

"The cost of hand picking snap beans often amounts to more than half the value of the crop," explains John D. Atkin, Cornell University vegetable crops specialist who has been testing the bean harvester. "In field trials last season it was possible to recover up to 90% of the pods of some varieties, which compares very favorably with hand picking."

The snap bean harvester, developed by the Chisholm-Ryder Company, Niagara Falls, N.Y., picks the pods clean, removing leaves and avoiding bruising of the pods. Yields up to 3 tons per acre were obtained in a once-over picking.

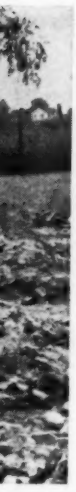
Since only one picking is possible (the machine severely damages the vines), uniform ripening and size are important. Rows must be spaced 3 feet apart to accommodate the 2-row picker; plants should be spaced 1½ to 2 inches in the row, and beans should receive level cultivation.

Tendergreen types, Kinghorn Wax, Processor, and Slendergreen have proved acceptable varieties for mechanical harvesting, but the New Yorks tests indicate that good germination and proper spacing are more important than variety.

Being tested commercially in the Northwest is the pole bean harvester developed by Food Machinery & Chemical Corporation's Canning Machinery Division, San Jose, Calif., in co-operation with the Pacific Northwest Blue Lake Bean Processors. It will pick about 4 acres per day, replacing some $400 worth of hand labor.

Lima bean growers are watching with interest the development of an experimental 1-row picker that

(*Continued on page 27*)



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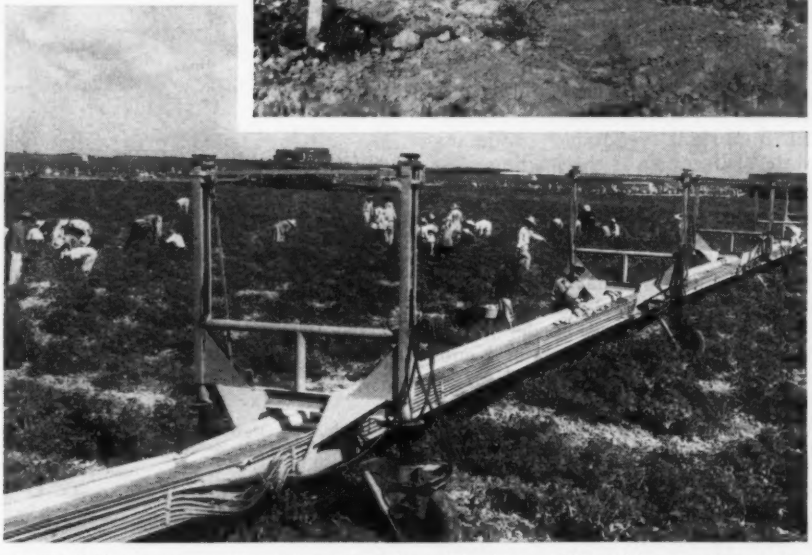
BLE GROWER

Pole bean harvester developed by Food Machinery Division, San Jose, Calif., in co-operation with Pacific Northwest Blue Lake Bean Processors. Operated by one man, it straddles row, picks about 4 acres per day. A pair of pickerheads works simultaneously on both sides of row, snapping beans from vine and dropping them into sled-type pan at bottom of harvester.

Below—Early model of University of California tomato harvester still in experimental stage. So far, used on pear-type processing tomato. Aim: a machine to handle 50 tons in 10-hour day, with the harvesting a "once-through" process.

Radish harvester developed by Calvin Lust pulls and tops 10 acres in 10-hour day, replacing 300 workers. The Lust harvester, driven by tractor power take-off, harvests five rows planted 9 inches apart in 63-inch bed; can be adjusted to different bed widths and numbers of row per bed. Radishes are pulled by tops between pairs of moving V-belts and carried to revolving knives for topping; are conveyed to companion trailer.



Mobile field conveyors are increasing rate of harvest by 30 to 100% and because there is less damage to plants they can result in improved yields and improved quality. Conveyor shown above in vast tomato plantings of B & L Farms in Florida is result of joint efforts of B & L and American Machinery Corp., Orlando, Fla. Pickers are dumping tomatoes onto belt conveyor.

Chisholm, Ryder Co., Niagara Falls, N. Y., manufactures this snap bean harvester used by New York grower Elmer Boekhoute in 9-acre field of Kinghorn wax beans. Machine requires one on tractor, one on harvester; replaces 50 hand pickers.

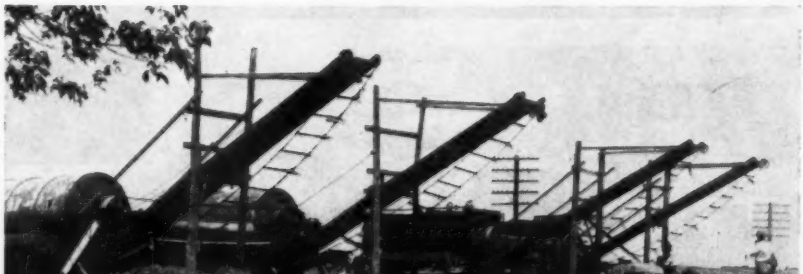
Produce harvester manufactured by Stone Conveyor Co., Honeoye, N. Y., and shown in New Jersey lettuce field, is towed by tractor. Unit will cover 38-foot wide area. Pickers walk behind conveyor booms, toss crop on moving belts. Elevating conveyor in center moves crop up onto towed wagon.

THE VEGETABLE AREAS OF

This is the thirteenth in a series on the important vegetable areas of the United States. New Jersey, Florida, Eastern Virginia, Arizona, Mississippi, Louisiana, Long Island, Maine, California's Imperial-Coachella and Central Valleys, South Carolina, and Maryland were visited in previous issues.—Ed.

Side-dressing potatoes in mid-June with liquid 15-10-5 fertilizer on the farm of James Burns and Son near Almond, in central Wisconsin.

By **JOHN A. SCHOENEMANN**
University of Wisconsin



Typical countryside scene in southern and east central Wisconsin in late June. This pea vining station is located near Arlington in the heart of the state's canning crop area.

WISCONSIN, long famous as "America's Dairyland," has also earned a well deserved place as an important vegetable producing state. Wisconsin is the leading state in the nation in acreage of vegetables grown for processing.

In the early 1900's, commercial production of vegetable crops for fresh market was largely centered along the well-populated lake shore area from the Illinois border northward through the counties of Kenosha, Racine, Milwaukee, and Ozaukee. Later production spread west to both upland and organic soils in nearby Waukesha, Walworth, Jefferson, and Washington counties. Leading crops in those early days were potatoes, onions, and cabbage.

The Wisconsin canning industry developed and concentrated itself in the triangular-shaped area defined by lines running from Janesville to Green Bay and Milwaukee. This has long been known as the famous "canning triangle" of the state.

Potato production once centered largely around Waupaca in central Wisconsin, has since moved westward into Portage county and into more northerly areas, principally around Antigo, Eagle River, Rhinelander, and Rice Lake.

Vegetables are grown on a wide variety of soil types in the state. The lake shore upland soils are chiefly a silt loam. Many southern marshes under cultivation for some time are a well-decomposed peat, while more-recently drained marshes are of a coarser peat-type soil.

Potatoes, cucumbers, snap beans, and sweet corn are grown in the central sand soil area largely under supplemental irrigation. Potatoes are grown in northern areas on soils ranging from sand to silt loam. Canning crops, such as peas, sweet corn, and lima beans, are produced on silt and clay loam soils dominant in southern and eastern Wisconsin.

Recent shifts and expansion in vegetable production have taken place largely on newly-drained marsh lands and in the central sand area under irrigation.

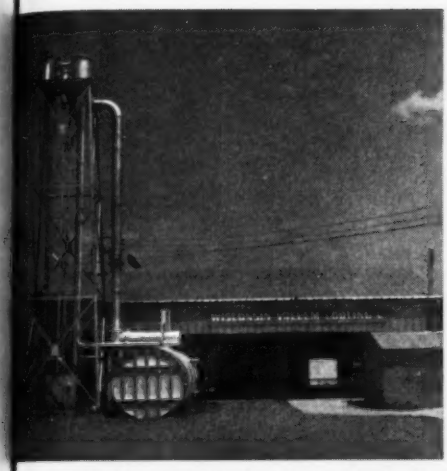
Wisconsin's market season for fresh vegetables extends from early June through October. The vegetable canning season is spread from late June for canning peas through October for such late-harvested crops as carrots and red beets. Potatoes are harvested and marketed from late July through early October. In addition, a good portion of the potato and onion crops is stored for marketing during winter months.

Peas and Sweet Corn for Canning: These crops fit well into the dairy farm rotation, and provide a source of cash income for many Wisconsin dairy farmers. Around 125,000 acres of peas and 100,000 acres of sweet corn are contracted annually. Varieties of peas grown are mainly of the Alaska, Early Sweet, Perfection, and related types. Sweet corn varieties grown are chiefly the Golden Cross Bantam type or similar hybrids.

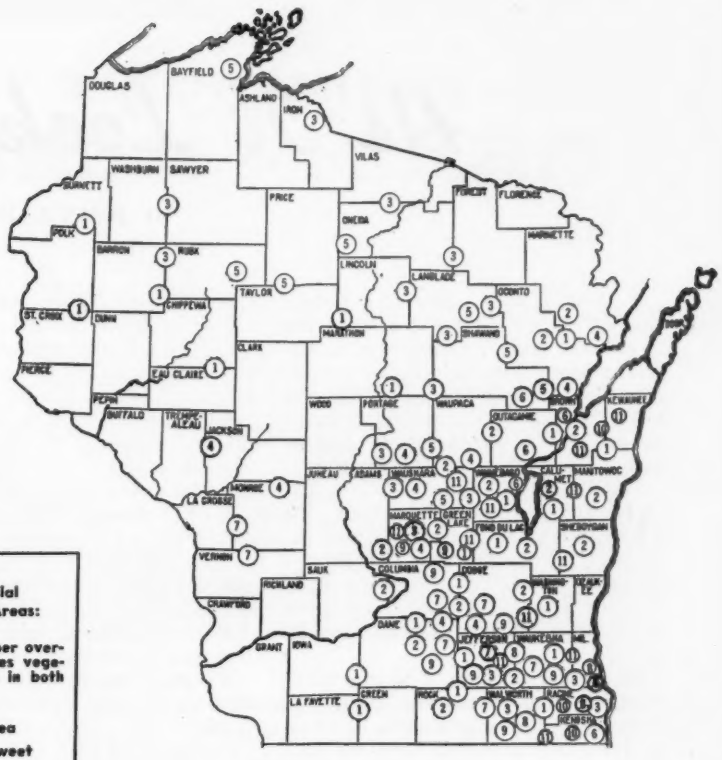
Potatoes: Wisconsin still holds an important place in supplying midwestern markets with potatoes. Around 50,000 acres are grown annually. Potatoes are the leading cash crop in the state in terms of dollar returns to farmers. Important varie-

AREAS OF AMERICA

WISCONSIN



Vacuum-cooling plant for head lettuce, other produce at Harold Gatzke farm near Berlin.



Commercial Vegetable Areas:

(Where a number overlaps county lines vegetable is grown in both counties)

1—Canning pea
2—Canning sweet corn
3—Irish potato
4—Pickling cucumber
5—Snap bean
6—Cabbage
7—Lima bean
8—Onion
9—Mint
10—Canning tomato
11—Carrot, beet, head lettuce

ties are Early Gem, Chippewa, Red Pontiac, Russet Sebago, Katahdin, and Russet Burbank. In addition to supplying the fresh market, a fairly sizable portion of the crop moves into potato chipping and canning channels and into the certified seed trade.

Cucumbers: Wisconsin ranks second in the nation in acreage of cucumbers grown for pickling. Around 20,000 acres are contracted annually. The major part of this acreage is planted to Wisconsin-developed varieties: spot-rot resistant SR-6 and spot-rot and mosaic resistant SMR-9 and SMR-12.

Snap Beans: Production of snap beans for canning is undergoing a major shift in Wisconsin. While the total acreage planted—around 15,000 acres—has not changed substantially, the crop is moving to larger farms and is being grown in larger-sized units where mechanical picking can be efficiently practiced. Potato growers in the central area are adopting snap beans as a second crop. These growers practice heavy fertilization, irrigation, and large-scale production methods. In contrast to many one-half to 3-acre hand-picked plantings of just a year ago, mechanical pickers now move through fields of 50 or more acres.

Lima Beans: This crop is produced for canning by some dairy farmers in southern Wisconsin as a

(*Continued on page 23*)

A Wisconsin muckland onion field in late May. More than 50% of the commercial onion acreage was planted to hybrid varieties this past season. Growers also practice heavy fertilization, seed treatment for the control of smut, as well as soil insecticide treatment for the control of maggots.

—All photographs by the author.

We are pleased to present to our readers Dr. John Carew, Professor of Horticulture at Michigan State University. His well-known column, As It Looks to Me, will appear monthly in American Vegetable Grower, beginning with this issue.—Ed.

As It Looks to Me

By JOHN CAREW

I think I have some idea how a baseball player feels when he moves to another club. The uniform is different—teammates are new—but the game is the same. It's a real pleasure to join AMERICAN VEGETABLE GROWER *and to work toward its goal of aiding the U.S. vegetable industry.*

AN eight-year-old boy took the botanical wind out of a California state park naturalist last August when he asked, "Why do trees grow *straight* up? Why don't they grow toward the sun like plants in a window?"

In similar fashion, 120 university research and extension specialists were bowled over by a three-day tour of fruit and vegetable areas of California. Prior to the American Society for Horticultural Science meetings in August, A. N. Kasimatis and his University of California committee arranged a near-perfect trip through the Santa Clara Valley, down to Watsonville, up through the San Joaquin Valley, to Davis, and then back to Palo Alto via the Napa Valley.

You cannot do justice with mere words to a thousand-acre field of strawberries producing 20 tons per acre; nor to a fork-lift truck that unloads a whole load of lettuce at one time; nor to an 80 acre tomato field yielding 18 tons of crack-free fruit at the first picking. You really have to see them to appreciate the position this state has in our national vegetable industry.

Production figures clearly show that California is "taking over" many fresh and processed vegetables. San Joaquin County alone raises 33% more tomatoes than the entire state of Indiana, which is the second most important tomato canning state in the nation.

As you travel, you inevitably ask, "What is to become of our eastern and midwestern areas? Will they decline, maintain their position, or increase in importance?"

Obviously, the answer is not clear. But several points are worth considering:

a) There will always be a profitable place for some vegetable growers around every large city. Roadside stands and sales to independent stores and city markets will continue to keep a fair number of men in business.

But the majority of eastern and midwestern growers will never effectively compete with western growers, despite freight rate advantages, until they work together.

Produce buyers want a large volume and steady supply of uniformly graded and packaged vegetables. Growers must pool their loads, agree to rigorous inspection and sell through competitive marketing agencies. Organizations like those in Capac, Mich., and Arlington Valley, Ill., have shown it can be done. The handwriting on the wall is in Braille: we can feel it as well as see it.

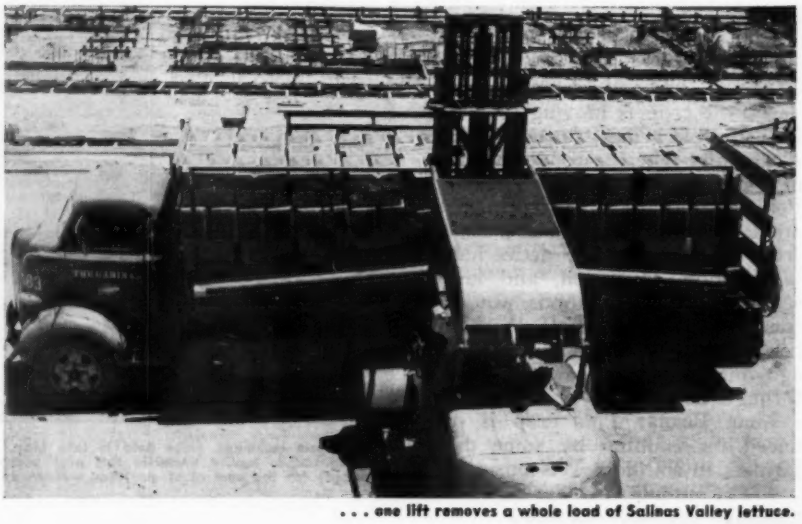
b) When Californians talk of quality, they usually mean *shipping* quality. In my opinion, competing areas are not making full use of their advantages in "locally-grown" quality.

c) All that glitters in California is not gold. Crown blight of melons, as yet unsolved, has dealt the Imperial Valley a severe blow. Fusarium wilt is a problem on asparagus. Water shortages are becoming serious in some sections.

Many production areas, for instance Santa Clara Valley, are being eliminated by "real estate erosion." The superintendent of schools in Los Angeles must provide 1000 more seats every Monday morning because of population increases.

Despite a highly commendable movement toward full mechanization, the labor picture could become heavily clouded if agreements with Mexico were drastically altered.

California is an impressive vegetable producing state. It will continue to grow in importance. Growers everywhere can profit by keeping informed on the dynamic industry and research developments taking place wtihin it. THE END.



. . . one lift removes a whole load of Salinas Valley lettuce.

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Valley lettuce.
BLE GROWER

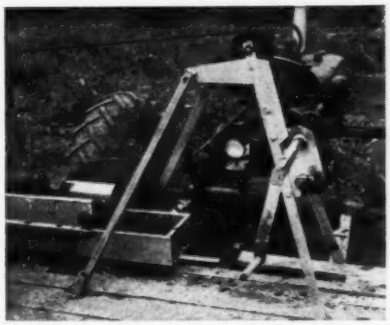
Build Melon HARVESTER

They adapted a conveyor belt for speedier melon harvesting

By E. C. WITTMEYER

Ohio State University

To speed up melon harvesting and reduce vine damage Coon Brothers, of Ashville, Ohio, modified a conveyor belt made by the Belt Corporation, Orient, Ohio. They mounted it on a trailer; run it with tractor power take-off.



Winch arrangement on trailer adjusts conveyor height. Man on trailer inspects melons as they are packed on trailer, also handles tractor.

Rubber buckets made from old automobile tires reduce mechanical damage to melons. They are spaced 27 inches apart on 25-foot conveyor.

VAPAM SOIL FUMIGANT

SOLE manufacturer and supplier of "Vapam" soil fumigant is Stauffer Chemical Company, 380 Madison Ave., New York 17, N. Y.

The name "Vapam" is Stauffer's registered proprietary trade name for its formulation of sodium methyl dithiocarbamate soil fumigant, and no other company has been licensed to sell any product under this name.

Information on "Vapam" soil fumigant can be secured direct from Stauffer or from your Stauffer dealer.

Order NOW to assure 1958 delivery

CRCO* Improved

*SAY "SEE-AR-CO"

MECHANICAL
BEAN PICKER

NOTICE: Orders Are Being Taken Now. No Additional Pickers Will Be Available Once 1958 Planned Production Is Sold.

"CRCO has made automatic bean harvesting a reality. 200 CRCO Mechanical Bean Pickers are already in use in the U.S. and Canada."

CRCO Mechanical Bean Pickers now pick 1/3 of all the beans grown in Wisconsin and New York State. Contact CRCO for full information.

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CHISHOLM-RYDER CO. INC.
Niagara Falls, New York
FOR THE FOOD PROCESSOR

STATE NEWS

- **California Expects Large Tomato Carryover**
- **Wisconsin Muck Farmers Conservation-Minded**

Tomato Picking Prices

CALIFORNIA—Yuba City and Woodland members of California Tomato Growers' Association agreed to an 11-cent per box starting price for pickers. This decision came after a report from the state Farm Placement Service that last year's 11-cent price is mandatory if Mexican nationals are to be employed.

Also agreed to was a 1½ cent per box price for loading.

Howard J. Wilson, secretary-manager of the association, reported a 32% carryover from last year's record crop, and there will be an average of more than 20% this year in spite of acreage cuts.

He predicted, however, that California will remain in strong competition with eastern producers since operating costs on the East Coast are higher and production is lower.—*Neale Leslie.*

Agricultural "Oscar"

MASSACHUSETTS—"For presentation each year to a farmer in recognition for continued achievement in the conservation of soil and water" is the inscription on the rotating trophy presented this year to three generations of the Salo family of Millbury —Victor V., semi-retired; his son, V. Victor; and V. Victor's family, Mrs. Salo and daughter, Janice, and son, Richard, who is attending Stockbridge School of Agriculture. The trophy was given originally to the Southern Worcester Soil Conservation District by the First National Bank of Webster.

In growing quality vegetables for the local Worcester markets, the Salos utilize to advantage both high and low land along the Blackstone River. They have a total of 40 acres planted to tomatoes, cabbage, squash, sweet corn, and lettuce, and since 1953 have been carefully following soil conservation practices.

They recently terraced, with the help of SCS technicians, a sloping hillside which for the past 20 years has been continuously rotated with crops of lettuce and rye as a cover crop. Now, surface erosion is no longer a problem.

In one flash rain storm Victor V., who was doubtful of the terrace construction, said, "The water came down the hill, ran into the rounded terrace, and slowly the water ran off into the woods with no damage to the good soil."

Honors went to three generations of the Salo family of Massachusetts when they received the rotating trophy symbolizing land in terms of perpetual use—instead of immediate profit, awarded by Southern Worcester Soil Conservation District. Standing, left to right: Victor V. Salo and V. Victor Salo. Kneeling: third generation Richard V. Salo, and pals.

Muck Farmers' Tour

WISCONSIN—The Wisconsin Muck Farmers' tour was held July 27. Some 150 growers and others interested in Wisconsin's muck land vegetable production industry toured farms in the area around

(*Continued on page 30*)

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F¹ HYBRID SUPERSLICER • ASHLEY

ONE POUND Hermetically sealed PROTECTO-CAN

Here are four of the finest slicing cucumbers we know. Fine, because their parents have been bred to vigorously produce uniform, beautiful green cucumbers that will hold their freshness through the markets right to the housewife. We like these strains — we know you will like them, too. These are only 4 of the more than 60 cucumber varieties we grow as America's largest Vineseed Breeders. A specialized strain for every market need.

ASK YOUR DEALER FOR ROBINSON SPECIALIST BREEDER'S STOCKS! THEY WILL MAKE MONEY FOR YOU!

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STATE NEWS
Special Report

VEGETABLE VARIETIES FOR TEXAS

VEGETABLE crops in Texas are produced in the spring, fall, and winter, depending on location. The high plains of west Texas enjoy a successful summer vegetable season.

Contrary to popular opinion, seasons are not long. The spring season starts with cool weather and is terminated quickly by hot, dry weather. The fall season begins under extremely high temperatures and terminates shortly with frost. Winter crops do exceptionally well in areas where they are adapted.

The combination of extremes of high temperature, limited rainfall, high light intensity, and hot dry winds, coupled with irrigation water often high in salts, means that vegetable varieties must meet quite rigid requirements.

Some of the more recent varieties which have met requirements quite well are:

GREEN BUSH BEAN

Pearlgreen

A good processor. Pods 5½ inches long, round, slightly curved, medium green, smooth, and uniform. Plant slightly higher than Tendergreen and season about the same.

CAULIFLOWER

Dominant

A good fresh market and freezing type. Plant medium. Heads large, pure white, firm, do not yellow, and remain in top shape for long period. Maturity 15 days later than Early Dwarf Erfurt.

ONION

Eclipse

Crystal wax type, highly resistant to pink root. Very productive, is slower to bolt than others of the type. Very white bulb, mild in flavor. Recommended for southern part of Texas.

Granex

A yellow F_1 hybrid of Bermuda type. Bulb shape, pink root resistant. Intermediate between parents Grano and male sterile Excel line.

White Granex

A white F_1 hybrid similar to yellow Granex in shape and general appearance. Bolting and pink root resistance about same as in Granex.

SPINACH

Early Hybrid 7

A high yielding, blue mold-resistant F_1 hybrid. Semi-savoy, dark green, and upright growing, making it suitable for machine harvesting. Recommended for fall and winter crop. Bolts easily when planted in spring. For canning and freezing.

SOUTHERN PEA

Cream 40

Upright, bushy plant, with pods well above foliage. Matures in 63 days. Pods 7 inches long, peas medium large. For freezing or fresh market.

Purple Hull 49

Upright with some runners. Pods well above foliage, well filled with peas of good size. Good for processing and fresh market.

TOMATO

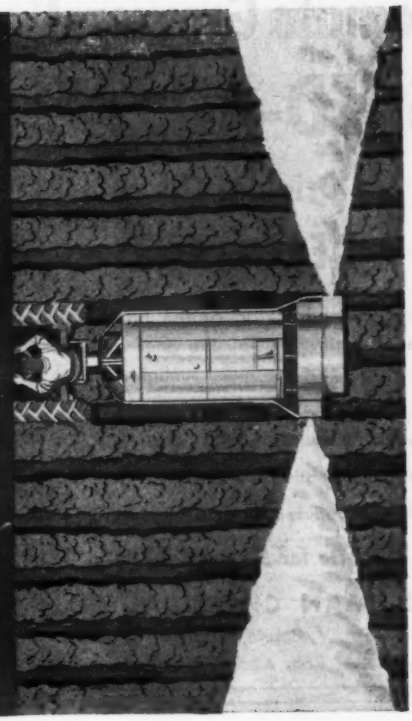
Texto 2

Semi-determinate, upright plant with adequate foliage for sunburn protection. Fruits round to oblate, medium size, firm and smooth on both stem and blossom end. Good green wrap or fresh market type of high quality. High degree of resistance to Fusarium wilt and collar rot phase of early blight. Adapted to south-central, central, and east Texas.

Weshaven

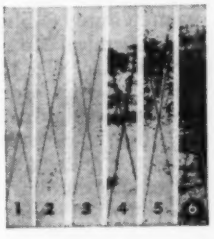
An indeterminate plant. Deep global fruit sizes well, is firm and has tough skin and ripens evenly. Highly resistant to Fusarium wilt and gray leaf spot. A week earlier than Rutgers, with somewhat larger fruits. Fruit stores well. Adapted to Winter Garden, Laredo, and Lower Rio Grande Valley.—*H. T. Blackhurst, A. & M. College of Texas.*

MYERS BIGGER SPRAY TANK SAVES TIME

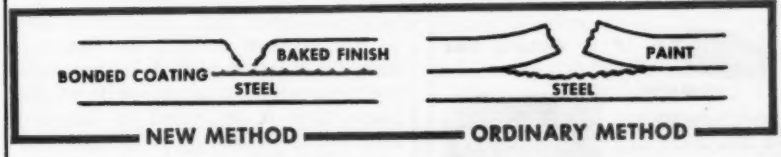


The big 500-gallon tank featured on Myers Air Sprayers permits longer continuous spraying—fewer stops a day to cover your fields. Old-fashioned dilute-boom rigs require more watering stops a day to cover the same acreage. Results: faster, more effective coverage and less labor cost, with a Myers Air Sprayer.

NEW COATING PROTECTS TANK LIFE



A new Myers tank coating prevents tank paint peeling and flaking. Test panels 1, 2 and 3 (left) received the new bonded coating; panels 4, 5 and 6 received ordinary treatment. All panels were scratched and immersed in strong solvent usually present in spray mixtures. Results: after several weeks panels 1, 2 and 3 lost no paint; others were stripped nearly bare.



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Tomato Growers!

SHED-A-LEAF®

The Original Chlorate DEFOLIANT

is recommended for better harvesting. Shed-A-Leaf opens up the vines and exposes tomatoes to more sunlight.

1. Tomatoes ripen faster... this results in an earlier harvest.
2. Picking is easier and quicker.
3. Mold is reduced by better drying.

Write for Special Bulletin

CHIPMAN CHEMICAL CO.
Dept. V, Bound Brook, N. J. or
Palo Alto, Calif.

Burpeeana Lettuce Is Better than Bibb

New for 1957—Earns 25% More for Greenhouse Growers

PHILADELPHIA, PA.—David Burpee, head of the world's largest mail-order seed house, says their new market growers specialty lettuce is the result of many years of selection to produce a butterhead superior to Bibb, with added flavor. Burpeeana produces heavier yield, higher quality, and is longer standing. Also makes good fall crop outdoors.

Shiny deep green with very slight bronze markings, saleable in about 75 days. Moderately crinkled or savoyed, always crisp and tender, superior very sweet flavor. Less subject to tipburn than most butterheads. Get your Burpeeana Lettuce seeds now, at wholesale: 1 oz. $1.00; ¼ lb. $3.00; 1 lb. $9.00, postpaid. Order direct from W. Atlee Burpee Co.—Philadelphia 32, Pa. or Clinton, Iowa or Riverside, Calif.

DEPENDABLE, SAFE, LOW COST PLASTIC GREENHOUSE HEATERS

SUN-FLO HEATERS — LP or Natural Gas

66,000 or 33,000 BTU input
Rugged construction (aluminized steel) (no rust)
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Directional heat flow
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Blower Attachment

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BURLEY BURNER CO., Inc.
2417 Nicholasville Pike Lexington, Ky.

TOMATO Defoliation

Study these pros and cons before using defoliants

By M. T. VITTUM
University of California, Davis

TOMATO growers throughout the country are asking about the advisability of defoliating tomatoes. Successful use of defoliants on such crops as cotton, dry beans, soybeans, potatoes, rice, flax, and hops has prompted them to wonder how far they can go in the use of defoliants to expose and ripen tomato fruit late in the season when days are becoming shorter and temperatures are dropping.

This article is designed to give tomato growers food for thought; it does not supply a final answer to the question, "Should I defoliate my crop?"

Materials

Two different groups of chemicals have been used to kill foliage of growing plants.

Dessicants, such as pentachlorophenol, potassium cyanate, and cyanamide dust, kill the foliage, but usually do not cause leaves to abscise or drop from the plant. These materials often cause injury to tomato fruits contacted by the chemical, so they are not desirable for tomato defoliation.

True **defoliants,** such as magnesium and/or sodium chlorate, tetraborate, and pentaborate ("Shed-A-Leaf," Chipman Chemical Co., P.O. Box 309, Bound Brook, N.J.), normally cause leaves to drop from the plant. Because these chemicals apparently have very little toxic effect on the fruit, they are the materials commonly used in tomato defoliation.

Results

Observations in California last year indicated that defoliation late in the season tended to increase amount of fruit picked by approximately 2 tons per acre, while at the same time it appeared to increase amount of shriveling, reduce amount of mold, and improve fruit color.

Temperature data from individual fruit located at various positions within the vines suggested that during the day exposed fruits, with no protective foliage, absorbed energy or heat from the sun more rapidly than did fruits which were protected by foliage, while at night the exposed fruits lost or radiated this heat to the surrounding air more rapidly than did protected fruits. Average hourly temperature, however, was approximately the same, regardless of position of fruit or condition of foliage.

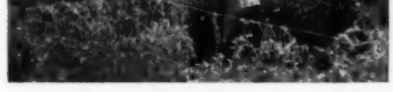
Does It Pay?

Although experimental data on the effects of tomato defoliation are quite limited at the present time, research is in progress at various experiment stations from New York to California, so that within a few years the picture should be much more definite. In the meantime, observations and experience suggest the following possibilities:

Defoliation might pay:

1) If fruit is undamaged, either directly (by spray injury) or indirectly (by sunburn, chilling injury, or freezing).

2) If mold is reduced, due to better air movement through, and more rapid drying of, defoliated plants.



PICK-MOBILE

Four-wheel "pick-mobile" with 40-foot boom built by Jerry and Hyman Fine, of Attleboro, Bristol County, Mass. Machine is made out of two lumber carriers (combined for 4-wheel drive), the hydraulic system off a Mack dump truck, and a model-A power unit.

Self-propelled, the vehicle has 10 boom settings, can be used for harvesting anything from lettuce to trellis tomatoes. Nine pickers, working along boom, can pick five rows of trellis tomatoes.

Baskets are hooked to boom with wire, are carried for one-half a row's picking. Then boom is swung around to unload on a following truck. Filled baskets can also be stacked on top of vehicle.

Boom is unhooked by removing a couple pins and the cables, is carried under the machine for rolling to next field.—*Charles L. Stratton.*

3) If a labor crew, late in the season, will stay on the job to harvest defoliated plants when they will not stay to harvest non-defoliated plants.

4) If ripening is hastened or if yield is increased. Present indications are that apparent yield increase is due to the fact that more fruits are exposed to pickers, so fewer are left unharvested in defoliated fields. Under fall climatic conditions, ripening rates are probably more closely associated with average hourly temperatures than they are with maximum temperatures, so it

is doubtful that defoliation actually hastens maturity.

Defoliation might not pay:

1) If fruit is damaged, either directly or indirectly. This includes possible contamination of the finished product by spray residues on fruit, but adequate washing of tomatoes before processing should remove any objectionable amounts of contaminants, such as boron.

2) If mold or fruit fly population is increased.

3) If tonnage is lost because unexpectedly favorable weather conditions continue for several weeks following defoliation. Once the plants are defoliated, photosynthesis stops and no more growth or production can occur.

Tomato growers should carefully study the pros and cons before contracting for a defoliation job. Remember that every field is different, and each case must be decided on its own merits. Never defoliate more than two weeks before canneries are expected to close for the season, and never defoliate except in fields where foliage is heavy and green and large numbers of ripe fruit are hidden from the pickers. Use defoliants rather than dessicants, and never exceed the rates recommended by the manufacturer. THE END.

TOMATO YEARBOOK

TOMATO growers and all persons interested in the tomato industry will find valuable information in the 1957 edition of the *American Tomato Yearbook,* which is now available.

Edited by Dr. John W. Carncross, Rutgers University College of Agriculture, the yearbook features the article, "Toward a Better Tomato Industry," by Robert A. Cooper, executive secretary of the Tomato Educational Program.

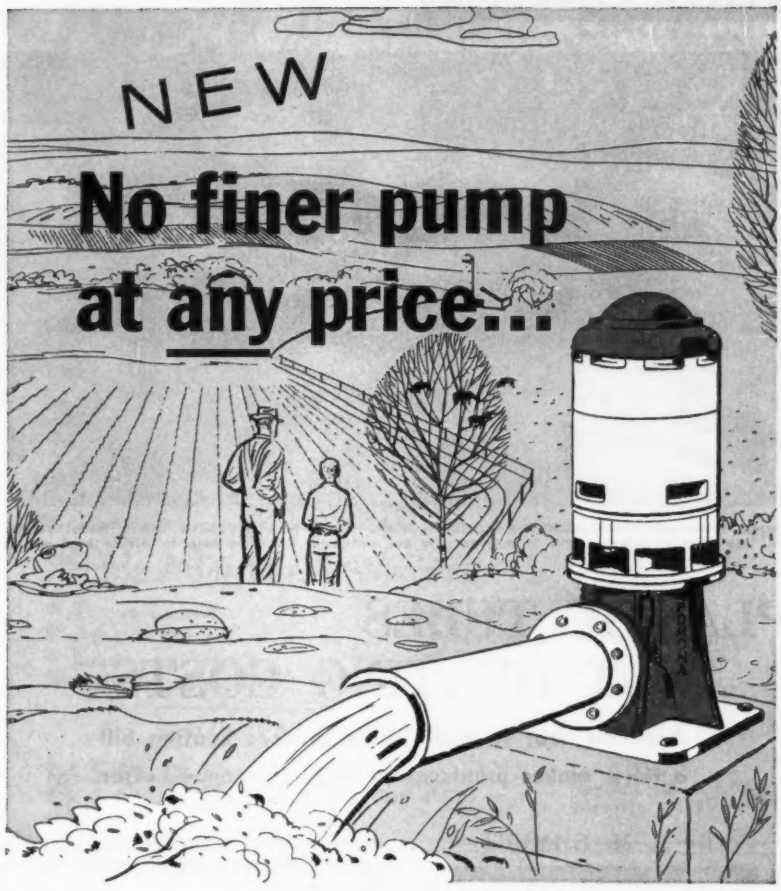
Recent references to tomato culture, diseases, pests and their control are also given.

Single copies may be secured for $2.00 from the American Tomato Yearbook, 8 Elm St., Westfield, N. J. A complete volume, 1951-57, is $8.00.

ACREAGE-MARKETING GUIDES ISSUED

ACREAGE-MARKETING Guides issued by the USDA recommend a total 1958 acreage for 18 major fresh winter vegetables 1% below 1957, and a 1958 acreage of winter potatoes 16% below 1957.

The recommended winter potato acreage for 1958 is 25% less than in 1957 in Florida, and 5% less than in 1957 in California.



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Plastic tubes used in divided row heating system. Close to heat source 6-inch metal headers and one joint of 4-inch metal in outside row are required. Dampers help to divide heat evenly.

PLASTIC TUBES CUT HEATING COSTS

Applying heat to plant roots reduces heating bill a third, makes plants grow faster, produce better

By E. M. EMMERT
University of Kentucky

ONE of the greatest limiting factors in greenhouse forcing, both in rapidity of efficient growth of plants and net returns, is efficient utilization of heat.

In the conventional method of greenhouse heating, plants are warmed only after the surrounding air has been heated. Furthermore, there is much loss of heat through the walls of the greenhouse, whether of plastic or glass construction.

A new method using plastic tubes is proving remarkably effective in heating the soil and air around the individual plants without warming up to such a great extent the atmosphere in the remainder of the greenhouse.

Black plastic tubes which can be easily rolled up out of the way are placed in the plant rows. If single large tubes are used, they must be 20 to 30 feet from the heat source to prevent melting of the plastic. Close to the heat source, tubes of material resistant to heat must be used.

Our tests have shown that tubes of 3 to 4 mil strength black plastic are the most economical. Such tubes will last for years. Aluminum foil laminated to clear polyethylene proved to be very effective. This material does not melt readily, but is more costly.

The best tubing is aluminum metalized black polyethylene. This radiates heat well and is long lasting. All these forms of tubing are not commercially available as yet.

Types of Dividers

The new heating method can be adapted to almost any planting system. In the divided row system, a 4-inch plastic tube is run along each row. Six-inch metal dividers are best. Where two rows are planted close together, a single tube can extend between each two rows.

In the case of lettuce, just enough space for the tube can be left between every four or five rows, and the outside tube can be hung on the side wall.

For flats and pots, the tubes can be hung on the outside wall and run down the inside walks.

It takes about one 4-inch tube for every 2 to 3 feet of house width. Four 6-inch tubes will heat a 20-foot-wide house.

Six-inch tubing run under plant benches works about as well as steam pipes. The heat is not as even as is obtained from hot water pipes. About 20 to 30 feet of metal are necessary on 6-inch nondivided systems to keep the plastic from melting.

Sources of Heat

In tests conducted thus far, heat from thermostatically controlled 66,000 B.T.U. gas burners was forced through the plastic tubes by a ⅓ h.p. fan. Heated air can be pulled from almost any type of heater and circulated through the plastic tubes. The heated air should contain a minimum amount of toxic materials.

While special precautions need not be taken with propane burners, it is best to run the exhaust tubes to the outside.

To prevent harmful fumes from escaping into the greenhouse, all connections should be airtight.

Outside Headers

When tubes are run to the outside, high winds may cause back drafts unless headers are used. Ordinary 6-inch metal tubes make effective headers. Each end of the header should be left open. In some cases back drafts may do no harm if a strong fan is used to force the heated air against the drafts.

When heat is carried a long distance from gas heaters, water may condense in the end of the tube farthest from the burner. This can be easily remedied by punching small holes in the bottom of the plastic tube at low spots where water collects.

Saves on Heating

Preliminary tests show that this heating method reduces heating costs a fourth to a third. Danger of disease infection also is lessened since leaves remain drier.

The system has been tested on tomatoes, lettuce, and cucumbers. Our spring crop of Michigan-Ohio hybrid tomatoes in a plastic greenhouse responded to plastic tube heating exceptionally well.

Tomatoes in our steam - heated glass greenhouse produced a good yield but quality was not as good. They lacked the smoothness of plastic tube-heated fruits, and cracking made many of the tomatoes unsalable. THE END.

PLASTIC GREENHOUSE

Working drawings of an inexpensive Plastic Greenhouse, prepared by the University of Kentucky, together with descriptive leaflet, may be obtained for 25 cents in coin or stamps from AMERICAN VEGETABLE GROWER, Willoughby, Ohio. Plans of the Cornell plastic greenhouse with sliding plastic roof panels are also included.

Other plans offered by the AMERICAN VEGETABLE GROWER service are Tenant House, Potato Storage, Machinery Shed, Poletype Packing House, and Roadside Market.

WISCONSIN

(*Continued from page* 15)

cash crop. Production is largely centered in Dane and Jefferson counties. Some 7000 to 8000 acres are produced annually.

Cabbage: The greater share of production of this crop is for kraut. Production is concentrated in the areas around Racine, Kenosha, and Outagamie counties. Varieties grown on the 8000 commercial acres are chiefly of the Globe, Ballhead, and similar types.

Red Beets: Wisconsin leads the nation in the production of red beets for processing, about 6000 acres being grown. This is an important contract crop with many commercial vegetable growers. The crop is well adapted to both upland and organic soils.

Onions: The onion crop has been important to Wisconsin muckland vegetable growers for many years. With present modern methods of production and use of newer hybrid varieties, yields of 1000 or more bushels per acre are consistently produced. Over one-half of the acreage grown was planted to newer hybrids this past season. The crop is largely harvested, handled, and stored using bulk methods which growers have found necessary to adopt in order to compete on the present-day market.

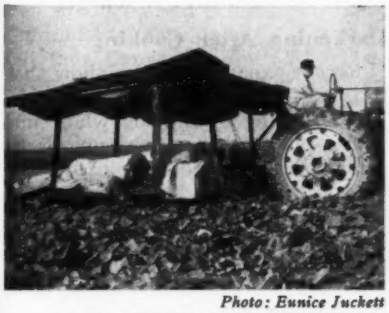

Photo: Eunice Juckett

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Unusual pickle-picking machine devised by Henry Schwenck, Bridgehampton, L. I. Riding in prone position on mattresses placed on platform made from truck frame, six pickers pick ripe cukes and toss them into trough. Machine costs less than $150; eliminates wear and tear on plants, as well as speeds up the picking operation.

Carrots: Wisconsin is also a leading producer of carrots for processing, with 3000 acres devoted to this crop. With up-to-date varieties and modern, efficient production methods, growers consistently obtain yields up to 30 tons per acre. Bunching-type carrots for prepackaging are of minor importance and are

(*Continued on page* 25)

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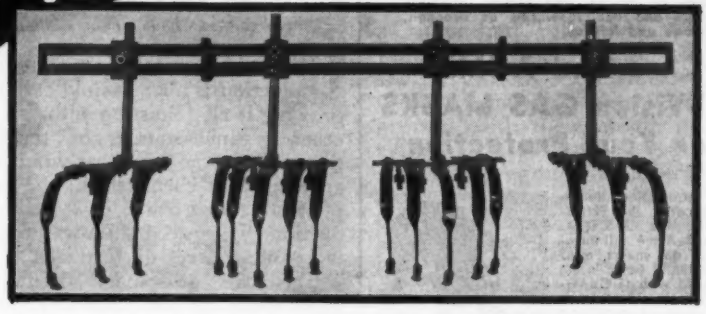

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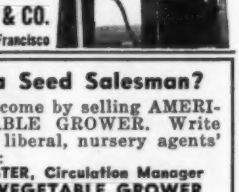

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POTATOES

Role of Chemicals in
QUALITY
Tuber Production

By ORA SMITH
The National Potato Chip Institute

USE of chemicals in potato production is about as old as potato growing itself. Starting with fish and other organic sources of fertilizer materials, it was found early in potato growing that chemicals in the form of fertilizers greatly increased production. Later, the shift was toward inorganic sources of fertilizer.

Chemicals also have been used many years for the control of insects and diseases by spraying and dusting the foliage and by treating the seed or soil in which potatoes are planted.

Only recently, however, have chemicals been used for other purposes during the growing or storage of the potato. The insecticide DDT became of general use about 1946. Prior to that time, vines would die and plants would mature before harvest. With the use of DDT, insects were controlled so well that plants continued to remain green and would grow until killed by frost. This was too late, however, for growers to begin harvesting.

Chemical Vine-Killing

Someone came up with the idea of spraying the plants with chemicals which would kill the vines at any desired time and enable harvesting to be done. As a result, chemical vine-killing now is widely practiced in all potato growing areas.

The potato processing industry is fairly new but is growing at a fantastic rate. Last year 22% of potatoes consumed as food in this country was in processed form.

As more potatoes are processed, a number of problems arise which did not exist in potatoes prepared directly for table use. Problems of discoloration in potato chips, French fries, canned and dehydrated potatoes, and in raw prepeeled potatoes are now numerous and aggravating to the industry. Certain chemicals applied properly may often prevent or reduce these types of darkening.

Under certain growing conditions and at low storage temperatures, potatoes accumulate reducing sugars. When these potatoes are made into potato chips, French fries, or are dehydrated, they are quite certain to result in a product too dark for good sales appeal.

Light colored chips and French fries may be processed from these potatoes by treating the slices for one minute in a dilute solution of sodium bisulfite, citric acid, and phosphoric acid at 180° F. A light color dehydrated product will result if the raw slices are treated with sodium bisulfite solution before dehydrating.

In the prepeeling industry the raw peeled potatoes are treated with sodium bisulfite to prevent them from discoloring before they are cooked. This prevents or delays enzymatic action of the process which causes the reddish brown or black pigment.

Potatoes often turn dark, especially at the stem ends, after they have been boiled. This discoloration may be prevented by adding a small amount of vinegar, lemon juice, or sodium acid pyrophosphate to the water in which they are boiled. This type of discoloration also has been reduced or prevented by spraying the plants in the field with one of a number of chemicals in a group known as EDTA (ethylenediamine tetraacetic acid). Peeled potatoes dipped in a weak solution of this chemical and then kept in the refrigerator for 24 hours will remain white after boiling.

Darkening After Cooking

Recent experiments also show that it is possible to prevent after-cooking darkening by dipping whole unpeeled potatoes in such chemicals as sodium bisulfite, sodium acid pyrophosphate, sodium gluconate, and EDTA, and then holding them in a tight container for 48 hours. Whole potatoes stored for 48 hours in an atmosphere of sulfur dioxide also will not discolor when boiled.

The dull or dark color of the skins of old potatoes may be brightened so that they resemble newly-harvested potatoes by holding them in sulfur dioxide gas for 24 to 48 hours.

Texture of potatoes is of special importance to the canning industry and also helps determine quality of chips, French fries, and dehydrated potatoes. Potatoes which fall apart during cooking are not acceptable for canning. This sloughing can be prevented, however, by adding to the peeled potatoes a solution of calcium hydroxide. By altering the fertilizer and spray program for the control of insects and diseases, potatoes of higher total solids or greater degree of mealiness may be obtained.

Chemicals now are applied to plants in the field as well as to tubers in storage to prevent potatoes from sprouting. This enables processors to store potatoes at high temperatures and thus avoid accumulation of sugars resulting in light-colored potato chips, French fries, and dehydrated potatoes. THE END.

WISCONSIN

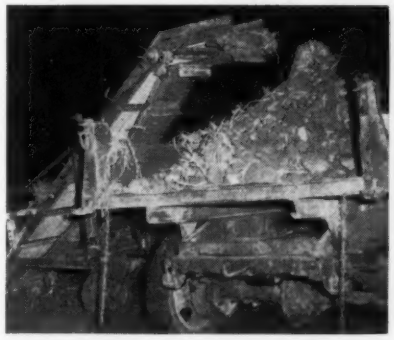
(*Continued from page* 23)

produced by only a few growers.

Mint: Production of this crop, which is processed for its oil, has increased markedly in the past five years on organic soils in southern Wisconsin. This is a highly specialized crop which has moved into Wisconsin chiefly because of available low-cost, disease-free organic soils, and because seasonal conditions usually provide for high yields of good quality mint oil. About 3300 acres are produced yearly.

Head Lettuce: This is a new crop for several muckland growers in the central part of the state. Some 1000 acres were produced this past season. Successive plantings provide for a continuous harvest from early July through September. Two vacuum cooling plants are being operated in this area to help insure high quality and low-cost efficient marketing. With improved non-bolting strains and more effective "yellows" control methods—two important present problems—production of head lettuce in central Wisconsin muck areas could be virtually "unlimited."

Other Crops: There are several additional crops of local importance to certain growers. Tomatoes for canning—about 700 acres—are important on mineral soils in Racine and Kenosha counties. Celery for fresh market and for processing is being grown on organic soils in central Wisconsin. A fair acreage of sweet green and hot yellow peppers is contracted by the pickling industry in central Wisconsin each season. In addition, market gardening, with a diverse variety of crops, continues to be of some importance around local urban consuming areas in the eastern and southern parts of the state.



GROWER BUILDS STONEPICKER

Ralph Smith, potato grower, of Corinna, Penobscot County, Maine, built a stonepicker for $500, following plans obtainable at University of Maine, Orono. Used in connection with two-row potato digger, stonepicker consists of 75 feet of conveyor belt, angle iron, and scrap metal, with mowing-machine slip clutch. Smith works over top 6 inches of soil, averaging ¾ acre per hour, gets about 95% of stones.

Smith made dump carts from old dump-truck bodies, and attaches to tractors. Photograph shows dump cart with stonepicker conveyor overhead. One tractor tows stonepicker, while second moves along parallel with dump cart. Picker loads automatically into cart. When filled, tractor moves cart away for dumping, and another tractor and cart move into place. Two dump carts are needed.—Charles L. Stratton.

The Wisconsin College of Agriculture experiment stations and the extension service continue to have an important role in serving the vegetable growing industry of the state. Various departments individually and co-operatively help growers with their production and marketing problems. Research and extension programs of these departments help growers to achieve good yields, high quality, and more efficient production and marketing on their farms. Federal-state inspection service of vegetables is available through the State Department of Agriculture.

With Wisconsin's potential of suitable soils and satisfactory climatic conditions, together with technical assistance available through various state agencies, coupled with the management ability of our vegetable growers, Wisconsin will continue to move ahead as a leading source of fresh and processed vegetables. THE END.

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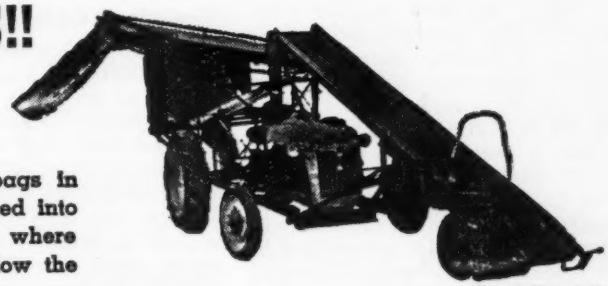

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Boys' and Girls' Page

CONVENTION HIGHLIGHTS

Welcome mat is waiting for NJVGA delegates to the annual meeting

THE welcome mat it waiting in Springfield, Ill., to greet the hundreds of delegates and their leaders who will move in on that city this coming December 8-12 to participate in the 23rd annual meeting of the National Junior Vegetable Growers Association.

The program lists two days of tours which are varied to include agriculture, industry, and history, as well as two days of demonstration and judging contests, entertainment, and banquets. Many surprises are in store in education, social functions, and entertainment.

One innovation this year will be a "Career Kick-Off Breakfast." Well-qualified men from the professional and industrial world will outline career opportunities available in the field of horticulture. This feature, plus our movie, "The Story of John Porter," should provide an excellent basis for the young men and women in obtaining specific ideas concerning what horticulture has to offer them as a career.

Headquarters will be in the Hotel Abraham Lincoln. Reservations should be made immediately.

Plans in Florida

Although this is only the second year of membership in NJVGA, the Florida chapter has made a great deal of progress. Since vegetable projects are among the most popular with both 4-H Club members and Future Farmers of America, enrollment is expected to increase each year. Interest has increased in the Production and Marketing project this year.

State winners in the Production and Marketing, Demonstration, and Judging, Grading, and Identification contests will receive expense-paid trips to the NJVGA convention in Springfield. The Florida Fruit and Vegetable Association sponsors these trips. The state event will be held on November 9, with Winter Haven tentatively selected as the place.

South Carolina NJVGA

The state convention of the South Carolina NJVGA was held July 1-2 at Clemson College. Sponsors for the two-day program were the South Carolina Peach Council, Clemson,

Mississippi contestants identify grade defects and grade Irish potatoes and sweetpotatoes in the state 4-H Vegetable Judging Contest held during the State 4-H Club Congress at State College. Fifty-two contestants participated.

and Richter and Cochran, Mt. Gilead, N. C.

Special training included visits to the college experimental farm. Featured in the field trips were variety trials of corn, cucumbers, tomatoes, potatoes, blueberries, pears, and peaches.

Program on the second day began with an assembly which included reports by the delegates to the 1956 national meeting given by **Jacqueline Amick** and **Martha Ellen Lever.** Officers were re-elected as follows: **Dalton Still,** president; **Camille Clamp,** vice-president; **Mitchell Richburg,** secretary-treasurer, and **Maxine Campbell,** reporter.

Mississippi Contestants

Mississippi contestants selected for the National Vegetable Judging as well as the Fruit and Vegetable Demonstration contests were announced following the state 4-H contests, which were held during the annual 4-H Club Congress at State College, July 15-18. The first-place winners in both of these state 4-H events were awarded trips to the NJVGA convention.

The Mississippi chapter of the NJVGA held its annual meeting on July 16 at State College, with **Ellouise Fair,** president, in charge. The National Canners Association film, "The Story of John Porter," was the feature of the meeting. **Gwendoline Fair,** chapter vice-president, gave an interesting report on the Atlanta convention.

New officers selected at the meeting were **Harvey Lewis;** president; **Ellouise Fair,** vice-president; **Christine Montgomery,** secretary; **Larry Taylor, Erma Gay Backstrom, Nancy Norris,** and **Gloria Patton,** directors. **Chesley Hines,** state NJVGA adult leader and Southern regional chairman, assisted with the meeting.

NJVGA 1957 CONVENTION PROGRAM

SUNDAY-THURSDAY, DECEMBER 8-12

SUNDAY—DECEMBER 8

Registration:
Hotel Abraham Lincoln, Springfield, Ill.

Ballroom
7:30-10:30 p.m. Get-together and entertainment.

MONDAY—DECEMBER 9

7:00-8:00 Get-acquainted Breakfast. Welcome to Springfield.
8:00 Busses leave Hotel Abraham Lincoln for Decatur and Pana.
9:00-10:45 Caterpillar Co., Decatur, Ill.
Tour of Production and Assembly Lines for Large Road and Earth Moving Equipment.
Movie *"The Eighth Sea"*—Narrated by Walter Cronkite.
11:00 a.m.-12:30 A. E. Staley Manufacturing Co.
Tour of Soybean and Corn Processing Plant.
12:30-1:15 Lunch.
1:45-4:30 Tour of Pana Area.
National Greenhouse Co.—Designers and Manufacturers of Greenhouses.
Illinois Rose Ltd.—Growers of Greenhouse Roses.
Asa Brothers Greenhouse—Growers of Potted Plants.
5:30 Arrive at Hotel.
6:00-8:00 State and Group Dinners.
8:00-11:00 Entertainment Sponsored by Franklin Life Isurance Co. (Movie), and Square Dancing.

TUESDAY—DECEMBER 10

8:00 Busses Leave Hotel.
8:30-10:00 DeKalb Experimental Farms—Breeding of Hybrid Chickens and Hybrid Corn.
10:45 a.m.-12:45 Pillsbury Mills.
1:00-1:30 Lincoln's Tomb (A Box Lunch Will Be Passed Out on the Busses).
2:00-2:45 Bunn's Stables.
3:15-4:00 New Salem State Park
4:15-5:00 Tolan's Aberdeen Angus Farm.
6:00 Chicken Barbecue.
7:00-11:00 Barn Dance (with Hill Billy Band) and Entertainment.

WEDNESDAY—DECEMBER 11

7:00-8:30 Career Kick-Off Breakfast—Short Program Followed by a Counseling Service on Careers in Horticulture.
8:30-6:00 National Demonstration Contest.
1:30 Annual Meeting, Board of Trustees, NJVGA Foundation, Inc.
1:30-5:30 Informal Tours of Small Groups to Points of Interest in and Around Springfield.
7:00-8:00 Annual Business Meeting of NJVGA. Door Prize.
8:00-11:00 Entertainment Sponsored by Illinois 4-H Clubs, and Square Dancing.

THURSDAY—DECEMBER 12

8:00-12:00 Annual National Judging, Grading, and Identification Contest.
12:30-3:00 Finals—National Demonstration Contest.
6:45 The 23rd Annual Awards Banquet.
Ballroom, Hotel Abraham Lincoln.
Speaker, Entertainment.
Presentation of Awards in Projects Sponsored by NJVGA.

A bi-monthly page for the younger generation of vegetable growers and their national organization, the National Junior Vegetable Growers Association. For information write Grant B. Snyder, French Hall, University of Massachusetts, Amherst, Mass.

OUTMODING

(*Continued from page* 12)

promises to make present harvesting methods obsolete. Developed at the University of Delaware by agricultural engineers Ernest Scarborough and William Larsen, the new machine should cut work in harvesting both Fordhook and baby limas by at least 60%.

The harvester picks the pods from the vines and makes unnecessary the hauling of vines, pods and all, to the viners. In 1956 field tests at the Seabrook Farms Tidewater Division, pods were picked from vines with less than a 5% loss of beans. There was 60% less hauling from field to viner.

The Delaware engineers hope to develop the present machine into a 2- or 4-row harvester suitable for commercial use. Present harvesting costs on Delaware's 13,000 acres of lima beans could be cut about $20 to $25 an acre for Fordhook beans and about $15 an acre for baby limas with the new harvester.

INSPECT CARROT SEED FIELD

Inspecting seed field of Red Cored Chantenay carrot are Ken Erickson, right, national director of the marketing-advertising department of Northrup, King & Co., Minneapolis, Minn., and Allan Scott, head of Northrup King's vegetable seed production at Nampa, Idaho.

Located on Clarence Skogsberg & Sons farm, south of Nampa, field was just coming into bloom. Though spring season was a little later than usual this year, plants were well developed and fields clean.

Asparagus Harvester

Being developed by the University of California with the support of the whole asparagus industry is a mechanical asparagus harvester. According to L. E. Moyle, manager of the California Asparagus Growers Association, harvesting cost is the greatest expense faced by the asparagus grower, amounting usually to about 40 or 50% of the gross return.

Mounted on a wheel tractor to

(*Continued on page* 28)

when you add TRIANGLE BRAND COPPER SULPHATE to your fertilizer.

Vegetables rich in minerals cannot be grown in copper-deficient soil. In addition, they are less appetizing and thus do not appeal to the consumer. Proper dosages of Triangle Brand Copper Sulphate—added to your fertilizer—will provide this vital soil mineral. More abundant growth of healthier and more flavorful vegetables is assured with use of copper sulphate in your fertilizer. This results in higher market values and greater profit. Don't forget to use Copper Sulphate in Bordeaux sprays and dusts for dependable control of common vegetable diseases.

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AMERICAN VEGETABLE GROWER, published monthly at Willoughby, Ohio, for October 1, 1957.

1. The names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, American Fruit Grower Publishing Company, Willoughby, Ohio; Editor, R. T. Meister, Willoughby, Ohio; Managing Editor, None; Business Manager, Edward L. Meister, Willoughby, Ohio.

2. The owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual member, must be given.)

American Fruit Grower Publishing Company, Willoughby, Ohio; E. G. K. Meister, Willoughby, Ohio; Elsie K. Meister, Willoughby, Ohio; Edward L. Meister, Willoughby, Ohio; R. T. Meister, Willoughby, Ohio.

3. The known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.) None.

4. Paragraphs 2 and 3 include, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the names of the person or corporation for whom each trustee is acting; also the statements in the two paragraphs show the affiant's full knowledge and belief as to the circumstances and conditions under which the stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner.

EDWARD L. MEISTER,
Business Manager

Sworn to and subscribed before me this 23rd day of September, 1957.

(Seal) E. P. JEANGUENAT, Notary Public.
(My commission expires Sept. 17, 1959)

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AMERICAN VEGETABLE GROWER offers this *very special* Christmas gift to readers who act immediately.

A discount of 10% will be allowed on all orders for more than one book on vegetable growing and allied subjects, PLUS a 5% discount—or a TOTAL discount of 15%—if your order is received on or before December 10, 1957. After that date and through January 31, 1958, only the 10% discount will be allowed.

Here is an opportunity—if you act quickly—to get a book at little or no cost. The amount you save on the two or more books you order will be ample to buy another book. What better gift for a vegetable grower friend than a book on his Favorite Subject! We suggest that when you go over the list below you keep your best friend in mind too.

Use the handy form when ordering. And if the list does not include the books you want, let us know. Our offer applies to all books on vegetable growing subjects.

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- **Pesticide Handbook,** by Donald E. H. Frear. 9th edition, just published. Lists trade names, active ingredients, uses, and manufacturers of spray chemicals and pesticide equipment. 216 pages $1.50
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OUTMODING

(*Continued from page 27*)

furnish mobility and power, the harvester is composed of three parts: a band saw to cut the asparagus; a pick-up unit of vertically mounted, padded disks; and a conveyor unit which carries the asparagus to the boxer. A two-man crew—a driver and a box handler—are needed.

A one-row machine of this type should handle 100 acres of asparagus, replacing 12 to 15 hand pickers, says University of California agricultural engineer Robert A. Kepner. The machine employs the principle of "set-level" cutting in that all spears regardless of length are cut each time. Cuttings are normally made every four to seven days.

In field tests about 90% of all spears longer than 4 inches were recovered and were undamaged. The machine is more suitable for processed asparagus than for the fresh market crop, because of the greater length requirement for the latter. This California asparagus harvester is still several years away from commercial use.

Another University of California project still in the experimental stage is the tomato harvester. So far it has been used only on a pear-type processing tomato, according to agricultural engineer Coby Lorenzen.

As visualized in its final form, the harvesting will be a "once-through" process, with the machine performing four principal operations—cutting the root system, lifting the vine, separating the tomatoes from the vine, and conveying the fruit from the vine. The aim is to get a harves-

Easy-to-Build Roadside Stand

This roadside market, conveniently located so the motorist can readily stop, will make it easy for you to take care of customers quickly. Movable racks make it possible to maintain an attractive stand in accordance with supply and demand. Overhanging roof affords protection for the customer.

Working drawings sent postpaid on receipt of $1.50

AMERICAN VEGETABLE GROWER
Willoughby, Ohio

ter that will handle about 50 tons of tomatoes in a 10-hour day.

Field Conveyors

Pending the commercial development of tomato and other harvesters, growers are using self-propelled field conveyors as mechanical aids. While the stoop labor of picking is not eliminated, these conveyors do eliminate the need for the carrying of baskets or boxes by the pickers.

Several types of conveyors are noteworthy for tomato harvesting. Developed originally by the University of California a 70-foot conveyor belt mounted on four rubber-tired power-driven wheels is now being manufactured by Likens Manufacturing Company, Huntington Park, Calif. The conveyor travels horizontally across 10 to 12 rows behind the picking crew. This type of conveyor can also be used in the harvesting of melons, cabbage, and peppers.

A self-propelled conveyor developed by agricultural engineers at the University of Maryland is smaller and is easily controlled by one operator using two simple hand valves. Thirty feet long, it can be made to move forward, backward, or turn in either direction and in either a 30- or 50-foot radius.

The B & L Farms near Princeton, Dade County, Fla., designed a mobile field belt conveyor especially for use in their vast tomato acreage, the largest in the country. Robin Bryant, Curtis Pitt, and George Harden of B & L and W. R. Pritchett of American Machinery Corp., Orlando, Fla., combined their efforts in developing the conveyor.

A tractor- or trailer-mounted produce harvester equipped with two 18-foot boom conveyors with 13-inch belt and an elevating conveyor for moving crop into a towed wagon, has been developed by Stone Conveyor Co., Honeoye, N.Y. Booms can be individually adjusted to clear fences or uneven ground. The manufacturers expect to produce a standard trailer model.

Root Crop Harvesters

A multiple-row radish harvester developed by grower Calvin Lust, of Chatfield, Ohio, and Zellwood, Fla., has been used successfully by growers in Florida, Ohio, and Michigan since 1955. It pulls and tops 10 acres in a 10-hour day, replacing about 300 workers.

Another radish harvester developed by Tawco Products, Inc., Columbus, Ohio, is of special interest to growers with smaller acreages. The harvester is powered by a 6½ h.p. Kohler engine, with the operator walking behind the machine.

It harvests and tops at the rate of 30 bushels per hour, and can be used in rows as close as 9 inches. Baskets are carried on the machine, and radish tops are directed to either side, the cut radishes dropping into the baskets.

Vegetable combines have mechanized the harvesting of root crops to a large degree. The Scott-Urschel combine made by the Scott Viner Company, Columbus, Ohio, is manufactured in two models: one for red beets and canning carrots, another for cello-pack carrots. It digs, tops, and loads in one operation.

The Bruner Onion Puller manufactured by the R. G. Bruner Manufacturing Company, Van Dyke, Mich., is used in the harvesting of onions and red beets. With regular machines, using crates, baskets, or bags, a crew of two to four workers and a two-plow tractor can do the work of 30 to 40 hand workers. With a bulk loading outfit, a tractor, and three men the cost of harvesting onions is reduced to about ½ cent per bushel.

ASTA AWARD

Harm Drewes, Oakview superintendent for Ferry-Morse Seed Company, Detroit, has been chosen by the All-America Selections Committee of the American Seed Trade Association as winner of the silver medallion award for horticultural achievement. Drewes joined Ferry-Morse in 1928 after an association with the Zwaan Co. in his native Holland. He has long been recognized as an authority on cabbage, spinach, and cauliflower breeding. Among his cabbage introductions are Ferry's Round Dutch, Greenback Y. R., Oakview Ballhead, Bonanza, and Copenhagen Resistant. Michihili, the most widely-used strain of Chinese cabbage, was developed at Oakview under Drewes. He has been co-operator of vegetables for *Encyclopedia Americana* for four years.

Mechanical harvesting of sweet corn for processing has come into widespread use since 1949, when the Food Machinery & Chemical Corporation's Canning Machinery Division introduced the FMC Sweet Corn Harvester.

The tractor-mounted, 2-row harvester automatically strips the ears from the stalk and conveys them to trucks or wagons in the field. This harvester reduces picking costs up to 57% and does the work of 10 to 15 hand pickers.

Whatever the crop, one thing is clear as Harvest Season 1957 draws to a close: there has been more progress made in mechanical harvesting in the last five years than during any other five-year period in the history of the vegetable industry. And the next five years hold promise of even greater things. THE END.

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BOOKS

PACKED WITH FACTS. SIMPLE AND easy-to-follow professional tricks to improve your strawberry production. Illustrated. $1.50. AMERICAN VEGETABLE GROWER, Box 107, Willoughby, Ohio.

BERRY BOOK: "THIRTY YEARS OF BERries" Raspberries and strawberries. 84 pages Price $1.00. Prepaid. ROY TURNER, 1525 S. Livingston Street. Peoria, Illinois.

TOMATO GROWERS — JUST PUBLISHED 1957 American Tomato Yearbook. Crammed with important facts. Send $2.00. Complete volume 1951-1957, $8.00. AMERICAN TOMATO YEARBOOK, Box 142-A, Westfield, New Jersey.

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FOURMONE COMPOST ACTIVATOR turns garden wastes, manures, sawdust, etc., into compost. Easy and safe to use. ¼ lb. (treats approximately 8 tons garden wastes) $1.25; ½ lb. $2.25; 1 lb. $3.95; 5 lb. $15.00 postpaid. Also 20 and 100 lbs. at special low prices. Free literature from FOREIGN PRODUCTS CORP., 21 Washington St., West Orange, N. J.

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American Vegetable Grower
Willoughby, Ohio

STATE NEWS

(*Continued from page* 18)

Sullivan, Dousman, and Palmyra in Jefferson and Waukesha counties.

Highlights of the tour included a stop at the **Ingersoll Farms**. Here the tour guests saw sweet corn grown for fresh market, hybrid onions, potatoes, and various processing crops. Of special interest were the shelter belt plantings made around the farm for conservation purposes.

Of special interest at the **Arnold Goede farm** was canning peas being grown on muck soil. Yields of over 4000 pounds per acre were being harvested. Peas are a new crop being tried by several Wisconsin muck land growers this past season. At the **Owens Farms** near Dousman the potato and onion crops were in prime condition. Here tour visitors saw 500 acres of potatoes and 200 acres of onions in one huge tract. The Owens deep plowed their muck for onions last fall with highly successful results. Few weeds, a good stand, and excellent tops were evident.

At the **Kincaid Farms** near Palmyra hybrid onion trial plots, a new drainage system layout, and windbreak planting trials were of special interest. The Kincaids grow several hundred acres of onions, potatoes, mint, celery, carrots, and beets on their muck land.

One of the most significant things noted on this season's tour was the effort being made toward conservation by muck land growers—not only effort toward conservation of their muck soils but shelter belt plantings aimed at wild life conservation as well.—*John A. Schoenemann, Sec'y, Madison.*

New Officers

GEORGIA—New officers of Sumter Sweet Potato Association at Americus are: President, A. B. Carlan, well-known Sumter County farmer, who succeeded Pete Rhyne, newly installed treasurer; and secretary, Alvin Hatcher, manager of the potato curing plant. Tom Finch was re-elected vice-president for his second year.

The officers were elected by the recently-elected board of directors: Fred McMillen, Leslie; W. C. Coronwell, Sumter City; James Hart, Friendship; Elliott Anderson, Plains; and Fred Sheppard, Leslie.—*Mrs. Pauline T. Stephens.*

HEADS PLANT BREEDERS

Newly-elected president of National Commercial Plant Breeders is Dr. Floyd L. Winter. He is also a vice-president and director of breeding and research for Associated Seed Growers, Inc., New Haven, Conn.

Plant Breeder Dies

PENNSYLVANIA—Dr. Charles Emory Myers, professor emeritus of plant breeding at Pennsylvania State University, died recently. Among his contributions to the field of plant breeding are the Penn State Earliana, Matchum, Pennheart, Stemless Pennred, and Stemless Pennorange tomatoes and the Penn State Ballhead cabbage.

Tomato or Potato?

OHIO—That is the question potato growers are asking when they find their potato plants sprouting "tomatoes." This is a natural phenomenon encouraged by the weather this year, and need not be viewed with alarm.—*E. C. Wittmeyer, Sec'y, Columbus.*

Know Your . . . VEGETABLE SEEDS

By VICTOR R. BOSWELL
U.S. Department of Agriculture

MUSKMELON

MUSKMELON SEEDS are of medium size (about 1000 per ounce), elongated, flattened, slightly tapered toward the tip, ivory to tan in color. They appear to the unaided eye to be very smooth and without any surface pattern. Under magnification, however, very fine ridge-and-furrow markings can be seen, especially toward the ends. An average fruit contains 400 to 600 seeds. The seeds are among the longest-lived of truck-crop seeds, storing well for five years or more under proper conditions.

Little or no muskmelon seed is imported into the United States. The greater part of our supplies come from California and Colorado where high yields can be obtained with less risk from disease and bad weather than in the East. The seed is produced in fields grown for seed only. It is heartbreaking to see tons of vine-ripe, luscious melons tossed into a "melon thresher" to be beaten to a pulp, only to recover the seeds and waste the flesh—but that's the way it's done.

Annual acreage for seed in this country varies from about 1500 to 2500 acres, with total production from about 500,000 to 750,000 pounds. Average yields per acre are about 275 to 300 pounds.

Muskmelon flowers are insect-pollinated and varieties will intercross freely if grown close together. Seed fields of different varieties must therefore be separated by one-quarter mile or more, and kept a similar distance from fields grown for the melons. Muskmelon will not cross with cucumber, squash, or pumpkin.

New for You

Low-Cost Grinder

Wherever I have been, growers are giving more attention to the development of richer soil through the use of compost grinders. A new, smaller unit is now available, selling for only $129.95. The machine shreds and grinds, assuring the owner of the best soil possible. The unit is portable and is built to last. Shredding teeth are heat-treated, and the company, which has been making grinding equipment for over 50 years, now has a model for every grower. If you will write to the W-W Grinder Corp., Dept. VG, Wichita 4, Kans., all the facts will be sent to you.

End Crop Destroyers

There is one sure, quick way of protecting valuable vegetable crops from rodent infestation. The Caw-Caw Firecracker Fuse Rope scares the life out of crop destroyers. Give them the Caw - Caw treatment and they will operate elsewhere. The cost is so small compared with the possible savings that all vegetable growers would do well to write to E. R. Clark, at the J. E. Fricke Co., 40 N. Front St., Philadelphia 6, Pa., for samples and details.

Makes Them Grow

A new fungicide is giving exciting results in many commercial vegetable areas. The new product has been under development since 1950 and today is doing a spectacular job controlling soil-borne diseases, such as crown rot of clover and alfalfa; club root of cabbage, cauliflower, broccoli, and Brussels sprouts; black root of cauliflower; root and stem rot of green beans; bottom rot on lettuce; and potato scab.

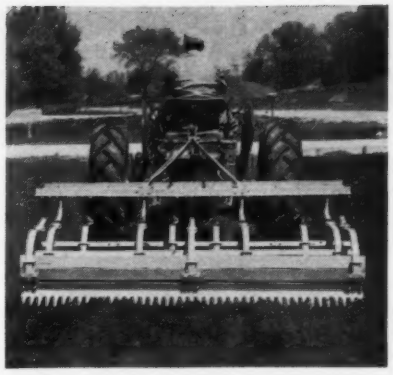
Experimental work is also underway on cantaloupes, strawberries, celery, onions, and a host of other vegetables. Terraclor, as the new product is known, is successful also as a seed treatment. It is easily broadcast or dusted in the rows with existing grower equipment. Why not get the latest booklet on Terraclor—just write Charlie Murphy, Olin Mathieson Chemical Co., Mathieson Bldg., Baltimore 3, Md.

Fertilizer Spreader

To get fertilizers, lime, and phosphate on your productive fields quickly and at small expense, you need the right equipment. For large vegetable acreages, an Adams & Doyle spreader will save the grower time and labor. This precision machine will spread fertilizers, phosphates, and limestone in any amount from 100 pounds to 4 tons per acre. The fertilizer hood is 20 feet wide with open ends for extra coverage. The hood folds compactly to less than 8 feet for highway travel. Single or double fan units can be interchanged in minutes. Write to Jack Schmutzler at Adams & Doyle Equipment Mfg. Co., Quincy, Ill., for full information.

Good-Bye, Gophers

A mold-resistant bait, known as "Gopher Tabs," made by Cooke Laboratories, Pico, Calif., has given good control of gophers in tests at the University of California, Davis, and in field tests in San Mateo County, California. The bait comes in tablet form and is available in commercial quantities or in small package sizes for the home gardener. Since it contains strychnine alkaloid, a powerful poison, it must be kept away from children, domestic animals, and foodstuffs.



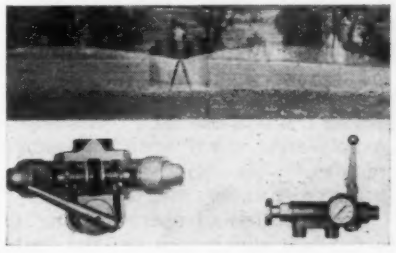
Profit Preparation

The time to insure vegetable profits is at the time you plant. No doubt your seed is planted for this year; still I want you to know about a new piece of equipment which has paid for itself many times over for growers across the country.

Known as the Roseman Tiller Rake, this new multipurpose tool scarifies, aerates, tills, grades, levels, and finish rakes. The new Tiller Rake fits all tractors and utilizes the hydraulic system. It's a simple matter to adjust the tool from the tractor to do any desired job. The Roseman Tiller Rake saves time and allows the grower to prepare his seedbed in one operation. Write J. A. Roseman today; his address is Roseman Tractor Equipment Co., 2600 Crawford Ave., Evanston, Ill. He'll send you full details promptly.

Better Insect Control

In Wisconsin last month I saw potato growers using a new automatic boomless sprayer. The sprayer is designed to take complete advantage of cross winds, and will spray up to a 40-foot swath. Wind advantage is accomplished by automatic valves which do all of the thinking and work. Made by the famous and well-known Hanson Equipment Company located in Beloit, Wis., the inexpensive rig is praised by growers. Why not get full information; just write the company.



Your Tractor Costs

A RECENT study of farm records in New York state revealed that operating a three-plow tractor costs the farmer approximately $1.35 per hour and for a two-plow tractor about 95 cents per hour. While these figures are averages, and tell us little, you might compare your costs with them.

Our big interest here is that you have figures for comparison. With greater mechanization of farm operations, there is a corresponding need for more intensive study of costs connected with the use of this equipment. We speak of laborsaving equipment or devices. Are they also cost-saving? After you have figured up depreciation, interest, insurance, and actual cost of operation, does the machine actually save you money?

With the increase in equipment usage, there is also a need for more detailed record keeping. When you hired 10 men to do a job, you paid them so much per hour and entered the figures on the books. With a machine which replaces these 10 workers, the entry is not nearly so simple. It requires a little figuring and study of your operation to calculate exactly what the machine-cost is.

There may be a few false economies in some laborsaving equipment, but, on the other hand, sometimes there is no labor available at any price.

The New York study showed depreciation to be the largest single cost factor in tractor operation, with fuel cost in second place, and repairs, third. Interest on investment ranked fourth.

These cost relationships remained in order, regardless of tractor size; they just were higher for the bigger tractor.

There was great variation between farms, too. Some farmers with three-bottom tractors operated them more cheaply than many with two-plow tractors. This brings in another factor to consider: the operator.

Your records of operation ought to tell you which men are the best and most efficient tractor operators. You might know from observation, but records will tell you in dollars and cents. A good set of records can help you place key men in key positions, and tractor operation *is* a key position.

Every grower knows that if he has a tractor operator who neglects oil changes, as well as attention to the air cleaner, greasing of bearings, and other minor jobs, fuel consumption is going to go up, and so will the repair bill.

Not only will the cost of operating that tractor rise, but chances are it will be idle when most needed to get a crop in or to get it harvested on time. Actually, this latter hidden cost may be more devastating than the actual high cost of operating the tractor.

We ought to consider the tractor, the farm power unit, in the same light that a railroad company considers the engine. Its adjustments and performance must always be checked to be sure it is in top-running condition. A locomotive that falters on the grade has something wrong with it; if it fails to obey the signals something is wrong with the engineer. The same is true with the farm tractor and its operator.

No Fuss, No Muss

IT is not amiss to mention prepackaging in this issue devoted primarily to mechanical harvesting. Both developments are aimed at reducing costs and giving the consumer a quality product.

In 1951, according to a report just issued by the Agricultural Marketing Service of the USDA 1% of the carrots in retailers fresh vegetable bins was prepackaged without tops.

The grower, in 1951, was paying transportation charges on leafy green tops, and the housewife was taking home with her those same tops which sometimes were not so leafy green. The carrots that made up the 1% mentioned above were topped in the terminal warehouse.

Five years later—in 1956—the sale of bunched, prepackaged carrots had increased to 85%. Topping and prepackaging were being done at shipping point. Packing house labor requirements were being reduced as much as 37%. The retail store's cost of handling prepackaged carrots was 2 cents per sales dollar compared with 14 cents for handling bunched carrots. Waste and spoilage losses in the retail store were less than 1% for prepackaged carrots, more than 8% for bunched carrots.

And the housewife was taking home, in a handy transparent bag, clean, bright carrots minus messy tops.

VEGETABLE CONVENTION

"Cheer up! You don't have a new virus; all you have is an old-fashioned rabbit bite."

QUOTE-OF-THE-MONTH

"A pumpkin vine is always a marvel. Between the frosts of spring and autumn it covers a great expanse and produces enormous fruits in the bargain."

—Liberty Hyde Bailey

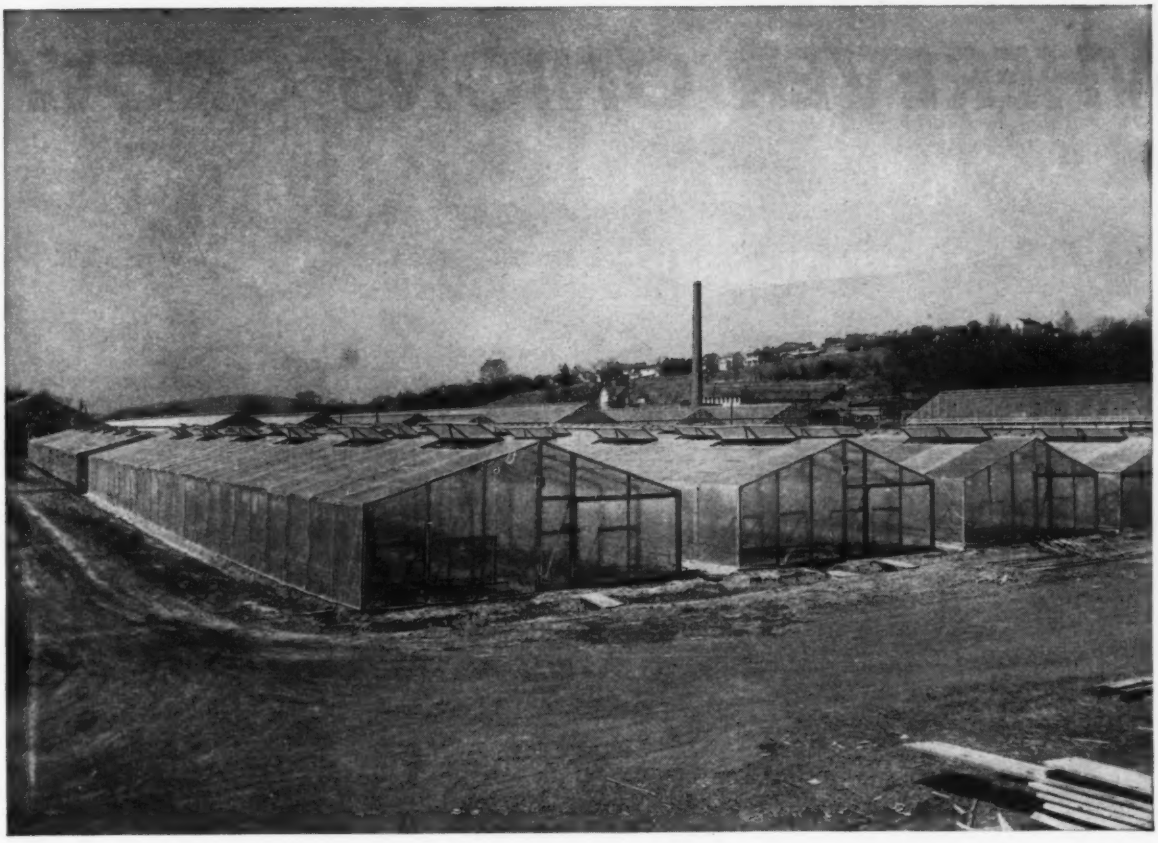
Vegetable Consumption

FOR the past 15 to 20 years annual consumption of fresh and processed vegetables has increased from an average of about 170 pounds per person to 203 pounds.

What is most interesting about this increase is that it has been due entirely to expansion in the use of canned and frozen vegetables. Actually, consumption of fresh vegetables decreased 7% during this period while consumption of processed vegetables increased more than 70%—from 56 to 97 pounds per capita. Frozen vegetables accounted for 14 pounds or about one-third of the increase, and canned items 27 pounds.

Coming Next Month

- Cultivated Mushrooms—A Specialty Crop
- New Orleans Vine-Ripe Tomato Deal
- Growing Vegetables in the Lower Rio Grande
- Good Potato Yields Through Good Management
- Advance Convention Program of VGAA



THIS ADVERTISEMENT WILL PUT $4,750 IN YOUR POCKET NOW—AND TO KEEP YOUR MONEY COMPANY, HERE'S HALF OF YOUR LAST SEASON'S GREENHOUSE HEATING COSTS TO BOOT!

If you're ready to spend $5,000 or more for a greenhouse—*don't.* For about $250 material costs, you can build an 18′ x 84′ greenhouse of VISQUEEN polyethylene film.

But more! A greenhouse of VISQUEEN film will cut your heating costs in half! All you need is the wood framework—and enough VISQUEEN film for an inside and an outside wall. Light gets in—heat *stays* in with the near-perfect dead-air space made by the film.

But even more! Because VISQUEEN film is 80% transparent to ultra-violet light, many plants actually grow better in a greenhouse of VISQUEEN film. And you save labor, too. VISQUEEN film retains inside greenhouse moisture so well that plants thrive on less-frequent watering.

It costs only *half* as much to heat a greenhouse of VISQUEEN film. You can replace the outside film for *far* less than the annual upkeep of glass greenhouses. And VISQUEEN film is *tough*. VISQUEEN film is *polyethylene*. Stands up to the severest temperature changes. Rolls off wind, rain, hail, snow and sleet. If you're not ready yet to pocket that $4,750 by building a greenhouse of VISQUEEN film, you can still save. Save 20% on this winter's heating costs by using an inside liner of VISQUEEN film for your present greenhouse. Profit-making greenhouse operators the country over are building new and saving big with VISQUEEN film. You can, too. Just clip the information request tag, clip to your letterhead and mail.

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